Antitrust ripples
Which Microsoft products face potential exposure. 24

Intranets supplement
Self-service intranets empower the masses. **Follows page 32**

Contractually speaking
Relocation and salary URLs for mobile IT consultants. **65**

COMPUTERWORLD

The World's Technology Newspaper
www.computerworld.com
August 24, 1998 · Vol. 32 · No. 34 · $4/Copy

Java use limited in critical apps

MARKET INDICATORS PREDICT SHIFT WITHIN 2 TO 5 YEARS

By Carol Sliwa

JAVA HYSTERIA is dying down: Three years after the programming language's much-ballyhooed introduction, most companies still aren't using it in a business-critical way, according to users and analysts.

Despite the hype, the technology created by Sun Microsystems, Inc. is still maturing, and companies are still learning how and when to use it, particularly in Internet, intranet and extranet environments. Object-oriented programmers with the necessary Java and business experience are hard to find. Many corporate information technology staffs are fully occupied wrestling with more pressing year 2000 and enterprise resource planning projects.

Still other users are committed to Microsoft Corp. technology and either don't see an urgent need to test the Java waters or harbor concerns about Sun's tussle with Microsoft over the latter's Windows-centric approach to Java.

"Java's only 3 years old, but it has expectations put on it of a 20-year-old development technology," said Daryl Plummer, an analyst at Stamford, Conn.-

Java, page 76

Microsoft backpedals on NT 5.0

By Sharon Gaudin

MICROSOFT CORP.'s main evangelist for its highly anticipated Windows NT 5.0 operating system is now taking a step back and trying to rein in user expectations.

Even as Microsoft was unveiling the second beta release of NT 5.0 last week, Jim Allchin, Microsoft's senior vice president of personal and business systems and chief NT executive, was beating a hasty retreat from some of the company's previous lofty proclamations.

In front of an audience of about 200 reviewers, journalists and analysts at an NT workshop in Redmond, Wash., Allchin

Microsoft, page 77

EARLY WARNING SIGNS

▸ *Pre-2000 glitches teach valuable lessons*

By Thomas Hoffman
and Julia King

WHEN MARY BANDAR didn't report to kindergarten as instructed by Minnesota state officials in 1993, she had a valid excuse: The 104-year-old Winona resident had already done her time with blocks and crayons. State computers mistook her as a 4-year-old because "89" was at the end of her birth date.

Similarly, year 2000-related glitches have already cropped up in many forward-looking computer applications, from drug-expiration dates to manufacturing systems. All provide a sneak preview of the problems expected to arrive in January 2000.

One survey found that 40%

Early 2000, page 20

INSIDE THIS ISSUE

IT TAKES A VILLAGE
ERP users see need for added business functions. Page 4

Medium is message
Procter & Gamble pushing to give Web ads value. Page 4

IN THE LAND OF GIANTS
Toolmaker says Microsoft reneged on code sharing. Page 6

Flush with cache
Intel to unveil chips for cheaper, punchier PCs. Page 14

Merger binge at car-parts maker puts IT to test

By Bob Wallace

THE IT GROUP at Federal-Mogul Corp. is finding that its chairman's "big hairy audacious goal" of reaching $10 billion in sales by 2002 presents hairy and audacious management and technology challenges.

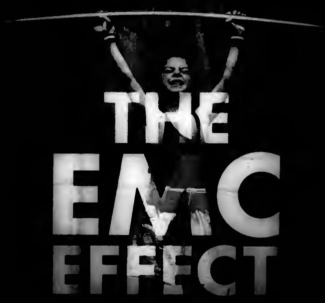
The Southfield, Mich., auto-parts maker last week announced plans to buy Cooper Industries, Inc.'s automotive unit for $1.9 billion, Federal-Mogul's third major acquisition this year.

"It's certainly a strain, but it's also challenging, and if you're in IT, it's where you want to be," said Fred Kerns, Federal-Mogul's vice president of information technology.

Merger binge, page 77

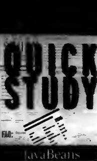
The Internet is inferior as a channel for hard goods, says **Jerry Storch**, a **top executive** at $28 billion retailer **Dayton Hudson.** Delivery costs **eat up savings**, premium brands become **commodities online**, and if manufacturers think they can bypass retailers, they've got another think coming, he warns. Is he right, or a Luddite?

Internet Commerce, page 28


THE
EMC
EFFECT

Talent-hungry U.S. hiring managers cross the border to Canada in search of workers. **IT Careers, page 61**

How do IS executives manage their time? Stephanie Reel and others offer tips on controlling the clock. **Managing, page 52**



Developers can write less code and get their jobs done quicker with JavaBeans. **QuickStudy, page 26**

In this issue

NEWS

4 **Spam filters appeal** to Internet providers, but users are eyeing them, too.

8 **Steel makers forge** revolutionary alliance for online metal trading.

10 **"Helpless" desk fails** at health care company, which outsourced to improve service and focus on its core business.

14 **Hospital CIOs flock** to share year 2000 information, desperate to identify failure points in complex interrelationships.

16 **Outsourcer offers** to take over the dirty support jobs but leave users in control of other help desk operations.

OPINION

28 **Microsoft rewrites** operating system history in pleading its case, so you should prepare for a season of Clintonesque waffling in DOJ lawsuit, Patricia Keefe warns.

29 **Users fear** the instability of much new technology and are right to avoid it, Michael Schrage argues.

54 **Information enables**, but logistics is what will really make companies successful, Jim Champy predicts.

QUICKSTUDY

26 **JavaBeans:** Component technology that aims to speed server app development.

TECHNICAL SECTIONS

CORPORATE STRATEGIES

31 **Pizza Hut consolidates** quality program with database and inspectors that keep 5,400 franchises up to snuff.

31 **Sysco finalizes** five-year project to make logistics, systems consistent nationwide.

31 **Nautica digs out** from mountain of copies with paper-free extranet.

INTERNET COMMERCE

33 **Internet pales** compared with brick stores in selling hard goods, according to an executive at retailer Dayton Hudson.

33 **Hilton saves, speeds development** with in-house Java-app instead of spending on consultant programmers.

THE ENTERPRISE NETWORK

37 **Unions concern** some users, who fear rigid contracts will keep telcos from training workers in latest technology.

37 **Bugs annoy** E-mail users, but third-party applications may help.

SOFTWARE

39 **Eli Lilly goes** against the grain with resource-based year 2000 approach, not task-oriented method.

39 **Inprise aims** at enterprise development but may alienate its friends.

SERVERS & PCs

45 **Business users turn** to Web as a way to buy PCs conveniently.

45 **Users win** in battle of Unix vendors.

46 **Smart cards ease** Big Mac purchases in Germany, mass transit in England.

DATA WAREHOUSING

49 **Capital One dodges** warehousing pitfalls, easing stock price crunch.

FEATURES

MANAGING

52 **Controlling time** is a key to success; here are tips from the tops in the trade.

56 **Role models help shape** work philosophies for some IS managers, who are grateful for early positive examples.

IN DEPTH

58 **Mom-and-pop shops discover** the Web is good for small business.

IT CAREERS

61 **IT organizations cross** the Canadian border to find scarce IT talent.

ETC.

Company Index ________ 75
Editorial/Letters ________ 28
How to contact CW ________ 75
Inside Lines ________ 76
Stock Ticker ________ 74

EXECUTIVE Briefing

News summary for senior managers

▪ **Most companies still aren't using Java for business-critical functions, an exclusive *Computerworld* survey shows. Adoption of the young programming language is slowed by corporate inertia, a dearth of programmers and opposition from Microsoft. But there are signs Java will become more important to business in the next two to five years.** Page 1

▪ **Microsoft's point man on the upcoming NT 5.0 backpedaled on some previous company claims about the operating system's prowess. The exec's description of NT 5.0 as "a work in progress" puzzled users, who wondered what features may be incomplete.** Page 1

▪ **IS shops are buying more PCs online, and the trend may snowball by 20% per year, according to some estimates. Dell and other vendors have responded with custom Web pages and other incentives for corporate buyers.** Page 45

▪ **Small businesses have learned that anybody who can build a good Web site can look like a corporate colossus. Mom-and-pop operations are working the 'net for big revenue gains and could even teach big companies a thing or two.** Page 58

▪ **Not everybody is sprinting toward an electronic-commerce future. A Dayton Hudson Corp. executive lit a hot debate when he recently torched the Internet as an "inferior channel" and said the $28 billion retailer, whose chains include Target and Marshall Field's, has limited Web plans.** Page 33

▪ **Many businesses hope that if they grit their teeth and spend big, they can run the entire company on one suite of packaged software. But often, IS shops that invest in a major ERP program must still purchase — and integrate — other products to get the functionality they need.** Page 4

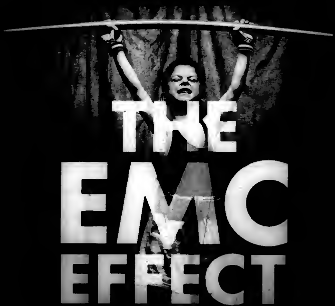
▪ **Recent US West and Bell Atlantic strikes reinforced some business users' concerns that the large voice and data carriers, most of which rely on union labor, don't respond to their needs like nonunion shops. Unions and Bell Atlantic scoffed at the charges.** Page 37

▪ **With HP, Sun and IBM locked in a savage battle for Unix server market share, IS is reaping tidy price/performance benefits. One company reported an 88% performance increase when it upgraded its servers.** Page 45

▪ **Columnist Bill Laberis lauds Apple's Steve Jobs for waking up a somnolent PC industry with the IMac. IS departments will support plenty of the machines in telecommuters' homes, he predicts.** Page 30

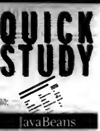
▪ **Eli Lilly went against the grain when it chose a resource-based, rather than task-oriented, project management system for its year 2000 problem. The pharmaceutical firm uses Platinum Technology software to figure out when any of its 1,500 IS workers worldwide becomes available for duty. Despite initial "culture shock," the company likes the results.** Page 39

Online this week
check out our online links, vendor lists and more
Enterprise
RESOURCE
planning
www.computerworld.com/more


THE
EMC
EFFECT

Talent-hungry U.S. hiring managers cross the border to Canada in search of workers.
IT Careers, page 61

How do IS executives manage their time? Stephanie Reel and others offer tips on controlling the clock. **Managing, page 52**



Developers can write less code and get their jobs done quicker with JavaBeans. **QuickStudy, page 26**

In this issue

NEWS

4 **Spam filters appeal** to Internet providers, but users are eyeing them, too.

8 **Steel makers forge** revolutionary alliance for online metal trading.

10 **"Helpless" desk fails** at health care company, which outsourced to improve service and focus on its core business.

14 **Hospital CIOs flock** to share year 2000 information, desperate to identify failure points in complex interrelationships.

16 **Outsourcer offers** to take over the dirty support jobs but leave users in control of other help desk operations.

OPINION

28 **Microsoft rewrites** operating system history in pleading its case, so you should prepare for a season of Clintonesque waffling in DOJ lawsuit, Patricia Keefe warns.

29 **Users fear** the instability of much new technology and are right to avoid it, Michael Schrage argues.

54 **Information enables,** but logistics is what will really make companies successful, Jim Champy predicts.

QUICKSTUDY

26 **JavaBeans:** Component technology that aims to speed server app development.

TECHNICAL SECTIONS

CORPORATE STRATEGIES

31 **Pizza Hut consolidates** quality program with database and inspectors that keep 5,400 franchises up to snuff.

31 **Sysco finalizes** five-year project to make logistics, systems consistent nationwide.

31 **Nautica digs out** from mountain of copies with paper-free extranet.

INTERNET COMMERCE

33 **Internet pales** compared with brick stores in selling hard goods, according to an executive at retailer Dayton Hudson.

33 **Hilton saves,** speeds development with in-house Java app instead of spending on consultant programmers.

THE ENTERPRISE NETWORK

37 **Unions concern** some users, who fear rigid contracts will keep telcos from training workers in latest technology.

37 **Bugs annoy** E-mail users, but third-party applications may help.

SOFTWARE

39 **Eli Lilly goes** against the grain with resource-based year 2000 approach, not task-oriented method.

39 **Inprise aims** at enterprise development but may alienate its friends.

SERVERS & PCs

45 **Business users turn** to Web as a way to buy PCs conveniently.

45 **Users win** in battle of Unix vendors.

45 **Smart cards ease** Big Mac purchases in Germany, mass transit in England.

DATA WAREHOUSING

49 **Capital One dodges** warehousing pitfalls, easing stock price crunch.

FEATURES

MANAGING

52 **Controlling time** is a key to success; here are tips from the tops in the trade.

56 **Role models help shape** work philosophies for some IS managers, who are grateful for early positive examples.

IN DEPTH

58 **Mom-and-pop shops discover** the Web is good for small business.

IT CAREERS

61 **IT organizations cross** the Canadian border to find scarce IT talent.

ETC.

Company index ____ 75
Editorial/Letters ____ 28
How to contact CW ____ 75
Inside Lines ____ 78
Stock Ticker ____ 74

Briefing

News summary for senior managers

▪ **Most companies still aren't using Java for business-critical functions, an exclusive *Computerworld* survey shows. Adoption of the young programming language is slowed by corporate inertia, a dearth of programmers and opposition from Microsoft. But there are signs Java will become more important to business in the next two to five years.** Page 1

▪ **Microsoft's point man on the upcoming NT 5.0 backpedaled on some previous company claims about the operating system's prowess. The exec's description of NT 5.0 as "a work in progress" puzzled users, who wondered what features may be incomplete.** Page 1

▪ **IS shops are buying more PCs online, and the trend may snowball by 20% per year, according to some estimates. Dell and other vendors have responded with custom Web pages and other incentives for corporate buyers.** Page 45

▪ **Small businesses have learned that anybody who can build a good Web site can look like a corporate colossus. Mom-and-pop operations are working the 'net for big revenue gains and could even teach big companies a thing or two.** Page 58

▪ **Not everybody is sprinting toward an electronic-commerce future. A Dayton Hudson Corp. executive lit a hot debate when he recently torched tha Internet as an "inferior channel" and said the $28 billion retailer, whose chains include Target and Marshall Field's, has limited Web plans.** Page 33

▪ **Many businesses hope that if they grit their teeth and spend big, they can run the entire company on one suite of packaged software. But often, IS shops that invest in a major ERP program must still purchase — and integrate — other products to get the functionality they need.** Page 4

▪ **Recent US West and Bell Atlantic strikes reinforced some business users' concerns that the large voice and data carriers, most of which rely on union labor, don't respond to their needs like nonunion shops. Unions and Bell Atlantic scoffed at the charges.** Page 37

▪ **With HP, Sun and IBM locked in a savage battle for Unix server market share, IS is reaping tidy price/performance benefits. One company reported an 88% performance increase when it upgraded its servers.** Page 45

▪ **Columnist Bill Laberis lauds Apple's Steve Jobs for waking up a somnolent PC industry with the iMac. IS departments will support plenty of the machines in telecommuters' homes, he predicts.** Page 30

▪ **Eli Lilly went against the grain when it chose a resource-based, rather than task-oriented, project management system for its year 2000 problem. The pharmaceutical firm uses Platinum Technology software to figure out when any of its 1,500 IS workers worldwide becomes available for duty. Despite initial "culture shock," the company likes the results.** Page 39

check out our online links, vendor lists and more

www.computerworld.com/more

All-in-one software dream can be a nightmare

▸ *Few companies can pull off ERP suite success*

By Craig Stedman

MANY USERS dream of running their entire company with one big suite of packaged software. But that wish doesn't always jibe with reality.

Even though SAP AG and other top application vendors are scurrying to cover more functional ground, users often still find that they have to rely on multiple products to meet all their business needs for production planning, finance, warehouse management and other key corporate functions.

And for some users, the complexity of getting various applications to work together can mean big headaches.

For example, Cascade Designs, Inc. is augmenting J. D. Edwards & Co.'s OneWorld manufacturing, financial and human resources applications with production planning software from SynQuest, Inc. Using OneWorld for planning would require "a mammoth manual operation," said John Burroughs, Cascade's president.

ROLLOUT DELAYED

But the Seattle-based maker of camping and biking equipment had to delay its rollout of SynQuest's software after finding that OneWorld couldn't pass along all the needed data. Just moving test data back and forth "is pretty ugly," said Doug Jacot, director of operations at Cascade.

The products were both supposed to go live in November, but Jacot said he expects to hold off on SynQuest until at least January while waiting for an upgraded interface from J. D. Edwards. As a stopgap, Cascade is linking homegrown planning software used now to OneWorld.

Industry analysts last week said the choice between buying a single application package and taking a multivendor approach has become a big question mark for users looking at packaged software.

Cascade's John Bur[illegible]ghs: Using an al[illegible] package for p[illegible] would requ[illegible] [illegible]

"Much of the world has tried to go with a single vendor," said Jim Holincheck, an analyst at Giga Information Group in Cambridge, Mass. "But there are very few companies that can get everything they need from one [suite]."

For example, a survey last month by Cambridge-based Forrester Research, Inc. found that only six of 50 Fortune 1,000 users were running their logistics operations with a single product. And only eight out of a subset of 32 users said they expected their core applications to fully suffice for supply-chain management.

Corning, Inc. is installing PeopleSoft, Inc.'s applications to run manufacturing and distribution plus finance, human resources and procurement. But Rick Beers, a strategic process leader at Corning, said it may have to turn to another software vendor for process manufacturing capabilities.

The Corning, N.Y.-based maker of optical fibers, glass and other products also will have to bolt a variety of add-on software to PeopleSoft for jobs such as plant maintenance and product bar-coding.

"When you do [packaged software], you're going to do bolt-ons," Beers said. And building and maintaining interfaces among different applications can be a trying process, especially when transactions have to flow back and forth in real time, he added.

Andy Peet, a consultant in Parkville, Md., was hired this year by an unidentified Baltimore-area company to write an interface between SAP's R/3 applications and Walker Interactive Systems, Inc.'s mainframe-based accounts receivable software.

The company installed the rest of SAP's financial modules but decided against using R/3 for accounts receivable because it couldn't keep track of discounts given to customers, Peet said. ☐

Key advertisers ally to improve marketing

By Sharon Machlis

IN A MAJOR push to improve the World Wide Web as an advertising medium, executives from top Web sites, consumer companies and ad agencies have formed a group that aims to overcome some of the obstacles to Internet marketing.

Among the group's focus: devising meaningful ways to measure ad effectiveness and improving consumer acceptance of Web ads, in part by developing a campaign to ease online privacy and security concerns.

Spearheaded by the nation's largest consumer advertiser, Procter & Gamble Co., Fast Forward was announced at the two-day Future of Advertising Stakeholders Summit at P&G's Cincinnati headquarters last week.

"We are entering the age of real money in this [Web] environment. This event signals the start of that," said Chuck Martin, a panel moderator and author of *The Digital Estate: Strategies for Competing, Surviving and Thriving in an Internetworked World*.

Representatives from 40 top advertisers, including General Motors Corp., IBM, Levi Strauss & Co., AT&T Corp. and Kraft Foods, Inc., as well as P&G (with a $3 billion total annual ad budget), were expected at the meeting, along with ad agencies, Web content publishers and industry and consumer groups.

One Fast Forward committee will work on devising by this November new models for online ads, to join things such as banners and testing programs to measure ad effectiveness.

HUGE POTENTIAL

P&G, maker of products such as Tide, Pampers and Crest, believes the Web hasn't lived up to its marketing potential because of technical constraints such as limited bandwidth, a lack of standards to adequately measure a Web ad's effectiveness and marketers' inability to use the Web to its fullest potential.

"We have all experimented quite a bit. The results have been mixed," said Tim Smith, CEO of Red Sky Interactive, an online ad agency in San Francisco.

Fast Forward will create four task forces focusing on consumer acceptance, effective advertising and marketing models, broadly accepted measurement standards for ad effectiveness, and easing the process of buying online advertising. It plans a summit meeting next September to discuss progress. ☐

Spam filters now a must, but standards are lacking

By Roberta Fusaro

SPAM FILTERS are a must for Internet service providers that have to weed out the junk mail from the real stuff. But the software isn't a standard for most businesses, analysts said.

Philip Carden, a managing consultant at Renaissance Worldwide, Inc., a business and technology consultancy in Newton, Mass., said that though spam is definitely a corporate problem, content filtering had been considered a "gimmicky feature" until recently.

The findings last month of a Federal Trade Commission's working group on spam [CW, July 20] and the rising use of E-mail for corporate messaging and marketing may change that perception.

"Now companies know that [mail-filtering] has to become part of their corporate E-mail architecture," Carden said. As they upgrade to year 2000-compliant systems or reassess their systems, they will add content-filtering capabilities, he said. And Carden estimated that market will reach about $50 million by 2000.

San Francisco-based SBC Internet Services, which includes Internet services from both Southwestern Bell and Pacific Bell, doesn't use third-party filtering products. Instead, it takes advantage of the filtering capabilities of its sendmail E-mail system and blocks all mail from domain names of known spammers.

But the company by this fall will roll out a new mail system — Sun Microsystems, Inc.'s Internet Mail System — and may consider filtering software under that system, said Nick Nicholas, regional policy manager at SBC Internet Services. "Spam is our customers' No. 1 complaint, and they are demanding that we filter out mail for them," he said.

And spammers more often are forging return addresses, using the domain names of free-mail providers in their postings. "We have no protection against that," said Scott Chasin, chief technology officer at USA.net in Colorado Springs, a provider of Web-based E-mail to about 4.5 million subscribers. Legislation is therefore necessary, he added.

There will always be mail hazards with filtering, analysts said, as several Internet service providers recently learned.

America Online, Inc. tried to protect its users by returning a load of spam identified as coming from Ameritech.net. However, the return address had been forged, and the returned mail created a deluge at Ameritech, which slowed down its service [CW, Aug. 3]. And according to published reports, when The Microsoft Network (*www.msn.com*) recently reconfigured its mail servers to block spam, it inadvertently blocked the legitimate mail being sent by some MSN users. ☐

Toolmaker joins Microsoft antitrust chorus

▸ *Tiny Bristol sues for access to NT source code*

By Kim S. Nash

A SMALL TOOLS company called Bristol Technology, Inc. may become a big pain to Microsoft Corp.

Danbury, Conn.-based Bristol last week charged Microsoft with illegally cutting off access to key Windows NT source code and application programming interfaces (API).

The suit, filed in U.S. District Court in Bridgeport, Conn., also claims that Microsoft unfairly jacked up by 400% the price Bristol must pay for the related technology it needs to build its development tools.

Microsoft's motivation, the suit further alleges, is that it wants to interfere with competition in the operating systems market. Bristol's Wind/U product allows applications built for Windows and Windows NT to run on competing operating systems, such as Unix, IBM's OS/390 and Compaq Computer Corp.'s OpenVMS.

USERS AT RISK

Sybase, Inc. CEO Mitchell Kertzman filed an affidavit with Bristol's lawsuit claiming that if Bristol doesn't have access to Windows NT technology, Sybase's own products — and customers — are at risk. Developers using Sybase's PowerBuilder tool kit use Bristol's Wind/U to port applications written for Windows to run on Unix.

Other customers of $8.7 million Bristol Technology include Compaq, Siemens Nixdorf, Inc. and General Electric Co.

Microsoft violated antitrust laws by offering Bristol a license for Microsoft technology before "pulling the rug out from under us," charged Bristol manager of business development Jean Blackwell in an interview last week.

WHAT'S AN API?

Windows application programming interfaces, or APIs, are features in the operating system that an application "calls," or invokes, to perform specific functions. Software companies use APIs to make their products run smoothly on Windows or Windows NT.

Microsoft said the suit was without merit. "Bristol is seeking to elevate a routine business negotiation over a source code license into a federal lawsuit," a spokeswoman said. The companies "have been negotiating a new license but . . . have not come to terms on royalties or the scope of the license," she added.

Keith Blackwell, Bristol's president and CEO, said the companies disagree on terms. He accused Microsoft of conducting "charade negotiations." Microsoft's claim that good-faith talks continued until the suit was filed last Tuesday was inaccurate, he said.

In its complaint, Bristol cited a Sherman Antitrust Act section known as the "doctrine of unlawful refusals to deal." It says that a court can impose an obligation on a company with a monopoly to deal with companies that it normally wouldn't, said Rich Gray, an antitrust and intellectual property lawyer at the law firm Bergeson, Eliopoulos, Grady and Gray LLP in San Jose, Calif.

The company wants the court to order Microsoft to turn over source code for Windows NT 5.0 and has enlisted the help of the Connecticut attorney general, who is also part of the government antitrust suit.

Bristol is also talking to the U.S. Department of Justice about the case, Keith Blackwell said.

Microsoft's spokeswoman declined to comment on how the company will counter Bristol's claims in court. But Microsoft is likely to hold that Windows NT code and APIs are Microsoft's intellectual property, Gray said.

Also in Microsoft's favor is the fact that a major Bristol competitor — Mainsoft Corp. in Sunnyvale, Calif. — has apparently agreed to the very terms Bristol shunned.

"We're within a couple days of signing that agreement," said Bill McCarthy, manager of business development at Mainsoft. When the deal is done, Mainsoft will have access to Microsoft technology that Bristol won't, which will give it a big competitive advantage, McCarthy said.

Microsoft can use that deal to show that it is still trying to promote cross-platform interoperability but simply didn't want to do business with Bristol, Gray said. ☐

& **A snip-and-save guide to Microsoft's antitrust exposure. Page 24**

Antitrust trial delay gives time to huddle

The Microsoft antitrust trial has been delayed two weeks to Sept. 23. The extra 15 days gives both sides more time to complete the depositions that were delayed during a two-week debate over whether pretrial interviews with Microsoft CEO Bill Gates and other executives should be open to the public.

Both Microsoft and the U.S. Department of Justice said they were pleased with the decision.

They had jointly asked U.S. District Court Judge Thomas Penfield Jackson to push back the trial's start from the original Sept. 8 date, saying the deposition fracas cut into preparation time.

Also last week, a federal appeals court granted Microsoft's request to bar the press and public from attending the remaining depositions in the case [CW, Aug. 17].

The U.S. Court of Appeals in Washington won't make a final decision until the end of next month, at the earliest. But for now, Gates and others can give pretrial testimony in private. The sessions will be videotaped, in case it is ultimately decided that the press and public can have access to the proceedings.

Jackson two weeks ago had granted *The New York Times* and other media outlets access to the depositions, after several news groups cited a 1913 law that opens antitrust depositions to the public.

The Justice Department didn't object, but Microsoft did. It asked for a stay of Jackson's decision, pending a formal appeal. A stay puts a given decision on hold, in this case until an appeals court can rule.

In its appeal filed last Monday, Microsoft argued that letting the press into the depositions would create "a carnival atmosphere." — Kim S. Nash

Clinton scandal drives up Internet traffic

By Sharon Machlis

THE SAGA OF President Clinton's extramarital exploits drove record numbers of people to Internet news sites last week, with CNN, MSNBC and ABC News all reporting their highest traffic ever.

Managers of those sites said they are learning to deal with the deluge during high-interest news events.

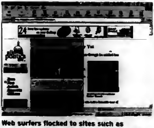
But some sites were sluggish or nearly impossible to access on Thursday, when news broke of U.S. attacks against targets in Afghanistan and Sudan.

Audio services, message boards and opinion polls were among the big draws last Monday. CNN's live audio feeds from its news networks, for example, garnered a quarter of a million listeners — triple the 6-month-old service's previous busiest day.

Many surfers apparently used the Web to keep up with news while at work, when they couldn't tune in to radio or television for updates. "Our traffic really drops off at the end of the business day," said Scott Woelfel, editor in chief at CNN.com.

CNN's Web sites served up 20.4 million pages last Monday, when the president testified about his relationship with former White House intern Monica Lewinsky and later made a brief televised address on that matter. That was 31% more than CNN's previous high. MSNBC said it had 1.2 million unique visitors to its site Monday — the old record was 781,000 — while ABCnews.com had more than 7. million page views and 1.6 million visits.

MSNBC recently redesigned its site so that it won't slow down as traffic builds, said John Nicol, director of technology. That means some people can't get into the site if all the servers are busy.



Web surfers flocked to sites such as CNN.com for up-to-the-minute news on the Clinton scandal and attack on Afghanistan

On Thursday, when access was extremely difficult, many attempts received an "http/1.1 server too busy" message. But once you're in, response is faster, Nicol said.

MSNBC has moved from static to virtual IP addressing for its servers, meaning that IP addresses are handed out on an as-needed basis.

If one server goes down, the address is reassigned, so users aren't sent to a nonfunctioning server as they wait for the problem to be spotted, Nicol said.

MSNBC also beefed up its buffering, so cached information can be used if there is a bottleneck in calling up data.

There were also problems accessing ABCnews.com Thursday; CNN was running slower but was still accessible.

Observers said heavily trafficked news sites have learned to shore up their systems after being flooded during events that grip the public, such as last year's death of Princess Diana in a car accident.

Most sites typically streamline their offerings on high-traffic days, removing some large graphics files and directing people quickly to the most-requested areas (MSNBC, for example, removed its usual welcome page completely).

CNN outsources live video feeds during peak news days to two companies: InterVu, Inc. in San Diego and Broadcast.com, Inc. in Dallas. ☐

Code reuse: Reality doesn't match promise

By David Orenstein
WASHINGTON

REUSING SOURCE CODE to ease application development is a great idea, software developers agree. But despite more than 15 years of trying to make reuse a normal part of software development, turning that promise into reality continues to be difficult, participants acknowledged at the SD East '98 conference here last week.

Successful implementation often requires a separate group to think beyond the needs of projects, to create awareness of reuse, said Norman Kerth, a consultant in Portland, Ore.

An object-oriented development framework isn't always necessary, participants said, but it helps. Yet some large organizations still use one.

A recent survey of 200 enterprises interested in object technology conducted by Cutter Information Corp., a research and consulting firm in Arlington, Mass., found that most are starting to develop some kind of component library. Only one-third have a librarian to maintain the components, however.

Energy giant Exxon Corp.'s exploration unit is weighing the conversion of its legacy Fortran and C applications to object-oriented Java applications, said Houston-based systems analyst Eric Moore. The company is looking for a consistent look among its applications, and reusable Java objects may help. The benefit is compelling, even though the applications would have to be rewritten, and Fortran programmers might have to be retrained, Moore said.

SOFTWARE REUSE COSTS AND PAYOFFS

- **Components must be reused three to five times before the costs of creating and supporting them are recovered**
- **It costs one and a half to three times as much to create and support a single reusable component as to create a component for just one use**
- **It costs 25% as much to use a reusable component as it does to create a new one**
- **It takes two to three product cycles (about three years) before the benefits of reuse become significant**

Companies making the transition to object technology can achieve reuse of homegrown objects only after several stages of learning, developing several real applications and standardizing with a tool set, Kerth said.

Without a clear framework, reuse attempts have sometimes fallen short at Northrop Grumman Corp.'s Baltimore radar systems plant, said J. R. Weaver, a senior engineer there. For example, he said code from a project he worked on in C has been reused in other applications, but improvements each new developer makes aren't put back into the original code. "It's frustrating to see a good piece of code languish," he said.

But reuse is alive and well elsewhere in Baltimore. The Association of Universities for Research in Astronomy (AURA), which runs the Space Telescope Science Institute for NASA, has a team that develops reusable components as part of AURA's mission to manage and archive images captured by the Hubble Space Telescope, said Scott Binegar, senior software systems engineer.

Binegar said AURA also has bought third-party components to save time and money as it builds file systems. Kerth said in-house developers should build only reusable components that they can't buy elsewhere. □

Steelmakers set up portal to Web

By Sharon Machlis

THREE MAJOR steel companies are investing more than $5 million to launch what they hope will be a portal-like World Wide Web site for the metals business.

Called MetalExchange (*www.metalexchange.net*), it will offer products for sale, news about the industry and a place for buyers and sellers to share information.

"You've got one of the most traditional industries in the world . . . coming together with the latest technology. That's amazing," said Patrick Stewart, chief information officer at Weirton Steel Corp. in Weirton, W. Va. The eighth-largest U.S. steelmaker, Weirton is spearheading the project.

The LTV Corp., a top-three steelmaker in Cleveland, and Steel Dynamics, Inc., a Butler, Ind., minimill known for technical innovation, are partners in the venture.

ONLINE PIONEER

Weirton is the only one of the three that now sells steel online. It hosts a Web auction of leftover materials. Launched two years ago, the online auction brings in about $50 million per year [CW, June 15]. MetalExchange is to go further and offer products and pricing from a wide range of vendors — something akin to what the Sabre reservation system does for airlines, Stewart said.

"One of the most traditional industries . . . [is] coming together with the latest technology."
– Patrick Stewart
Weirton Steel Corp.

In addition, with industry news from trade magazines and a "collaboration" component featuring bulletin boards, forums, presentations and the like, the site aims to provide the metals industry something similar to what Yahoo, Excite and other Web portals offer general consumers: one-stop shopping for information and commerce.

A REAL TIME-SAVER

"That could save enormous amounts of time," said Ken Dworznik, purchasing manager at Universal Steel Co. in Cleveland, a service center that buys steel to custom-cut and process for industrial clients. Now, he and several staffers spend a good deal of time on the telephone trying to scout out products and prices to meet special needs for anything from home construction to manufacturing automatic transmissions.

He is concerned, however, that individual metals brokers — basically little more than one person and a computer — could become more efficient competitors for materials with the same access to information as larger, more established firms.

MetalExchange will be rolled out in phases starting this fall, at first offering just content and collaboration. News will initially come from Cahners Business Information in Newton, Mass., a publisher of trade magazines such as *American Metal Market*. Commerce is expected to be available four to six weeks later.

MetalExchange will customize information based on data users provide when they register and on the results of efforts to track what pages users view, said Robert Griffin, a member of the technical team at the new Web venture.

The site also plans to send E-mail messages notifying users when articles or products for sale in their area of interest come online.

"I think they're going about this very wisely," said Erica Rugullies, an analyst at Giga Information Group in Cambridge, Mass. She said she expects such industry-focused communities to be the next wave in business-to-business electronic commerce.

Other efforts are in the works, Rugullies said. For example, an online market is being planned for the battery industry, and VerticalNet, Inc. in Horsham, Pa., is trying to develop "vertical trade communities" for industries such as fiber optics and utilities. □

Banks gird for run on ATMs New Year's Eve '99

By Thomas Hoffman

U.S. BANKS are expected to face a surge of cash withdrawals late next year, as jittery customers drain their accounts in fear that the year 2000 problem may freeze their funds or prevent them from making credit-card transactions across the new year.

The good news for banks is that they won't have to make any sweeping changes to their automated teller machine (ATM) operations or transaction processing environments.

HOLIDAY TRAFFIC

"The run-up on cash withdrawals will be like a Fourth of July weekend on [a summer resort area like] Cape Cod [Mass.]," said Barbara Smiley, an analyst at Meridien Research, Inc. in Newton, Mass.

"There will be a larger-than-normal draw on cash," she said, but mechanisms are built in to most ATM systems to handle the higher volumes, she added. Most big banks have systems that automatically fill their ATM machines when more cash is needed.

"It's very elastic — it shouldn't be a major problem for big banks," said a spokesman at Banc One Corp. in Columbus, Ohio, which is merging with First Chicago NBD Corp. in Chicago.

However, some smaller banks with manual ATM operations may have to staff branches around-the-clock over the New Year's weekend to feed cash into their machines, the Banc One spokesman said.

To help U.S. banks cope with the late-1999 cash crunch, the U.S. Federal Reserve Board announced plans earlier this month to increase its cash reserves by $150 billion to $200 billion.

During the 1999 fiscal period, $460 billion will be in circulation and $200 billion will be held in inventory, an amount that's "a more than comfortable safety margin," wrote Gartner Group, Inc. analyst Lou Marcoccio in a note to the Stamford, Conn.-based consulting firm's clients last week.

The Fed announced its increased cash inventory plans now because its cash print order for October 1998 to September 1999 has to be placed this month, Marcoccio said. □

Unisys answers help desk outsourcing call

By Julia King

BUSINESS USERS AT Integrated Health Services, Inc. (IHS) used to have a lot of names for their corporate help desk. The "helpless desk" was the most popular.

With only five staffers to answer help calls from 500 home health nurses and aides, nursing home personnel and other users, trouble tickets could lie around for as long as nine days before being resolved. Meanwhile, the company was growing by leaps and bounds.

As it turned out, outsourcing was the only way out.

"Phones went unanswered, and anything you hear bad about a help desk was happening. It was a joke," said Lisa Wulf, manager of customer service and support at the Baltimore-based health care company.

ON HOLD

Most companies are in no rush to get their help desks off the telephone. In 1997, only 12% of corporations used the World Wide Web to deliver help services to users. That was up from 4% in 1996.

Source: Meta Group, Inc., Stamford, Conn.

And it was only getting worse as IHS rapidly acquired new businesses, growing from $900 million to $3.5 billion in revenue — and from 500 users to more than 6,000 — in just two and a half years.

"In reality, our help desk could not scale enough to support how fast we were moving," said Orew Krushinski, vice president of technical services. As a result, IHS decided to outsource technical support, signing a three-year, $6 million contract with Unisys Corp., which announced the contract last week.

But Unisys has actually been on the job at IHS since April, providing help desk and other services, including PC and laptop repair and wide-area network service.

IHS's contract with Unisys calls for the outsourcer to pick up calls to the help desk within 30 seconds of the first ring.

Under the outsourcing arrangement, IHS users call a single telephone number for any kind of help they need. Calls are logged in to a single help desk system from Remedy Corp. in Mountain View, Calif. Statistics collected by IHS since April show that about 65% of help requests are resolved on the first call.

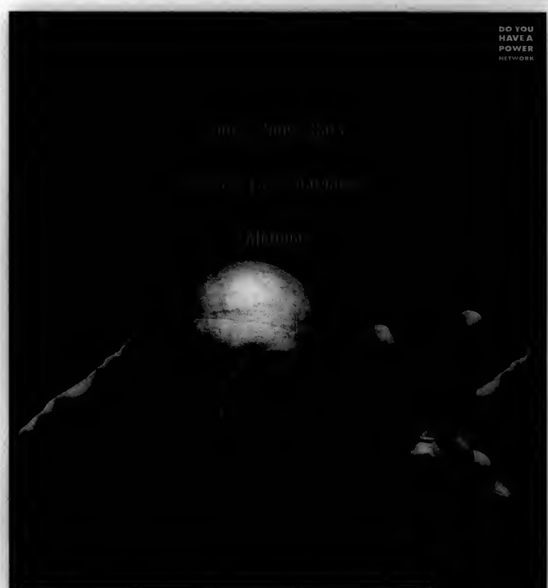
"It's quite a big improvement. Now you get through to someone who can resolve your problem," said Patricia Keel, a business office manager at an IHS-owned nursing home in Raleigh, N.C. "Before, you had to leave a message and wait for someone to call you back."

Krushinski said Unisys is also providing a range of other services under the contract, including managing hardware warranties; coordinating moves, adds and changes at the company's 2,200 facilities; and tracking and managing all of IHS's desktop technology assets.

The one support area that remains problematic, however, is managing the thousands of laptops used by home health nurses and other mobile workers.

"The reason laptops are so difficult to manage is that they're out of your control. They're in people's homes and in their cars," Krushinski said.

"We also have clinicians, nursing practitioners and other people with no clue how to treat a laptop. A lot of our problems are with users who don't understand you shouldn't leave the laptop in the sun for four hours, run it over with your car or let your kids put games on it," he said. ☐


DO YOU
HAVE A
POWER
NETWORK

FRANKLY SPEAKING

Microsoft's never-ending story

FRANK HAYES

Jim Allchin looks worried these days. He has good reason to be. As you read in Sharon Gaudin's news story on Page 1 of this week's *Computerworld*, Allchin spent an hour last Tuesday morning doggedly trying to rein in the unbridled expectations for Windows NT 5.0 in front of 200 reporters, reviewers and analysts.

By now you already know the drill: NT 5.0 is miserably late. Major features are still under construction. Most of all, even when it's in shape to ship, it won't be the spectacular product whose praises Allchin was singing last September, when the first NT 5.0 beta arrived. It won't be insanely great or perfect — just, well, pretty good.

Allchin should be worried about how far NT 5.0 will fall short of its hype and how late it's running. He's Microsoft's big dog on what's supposed to be one of the company's biggest products. If customers' faith in NT is shaken — well, that's bad news in Redmond.

But Allchin also should be worried about something that goes far beyond spin control. That's the possibility — the likelihood, actually — that NT 5.0 has become a monster.

Every day at 5 p.m., the NT 5.0 team recompiles the entire operating system. Testers spend the night running it through endless automated tests — stress tests, compatibility tests, tests that simply put NT 5.0 through its paces. In the morning, team leaders decide which bugs will be fixed that day, and the legions of programmers get their marching orders. By 5 p.m., the changes have been checked in, and the cycle starts all over again.

That's a fine, sensible way to squeeze out the last few bugs at the end of a large project. But this daily build/test/fix cycle has been going on for a year. It's expected to keep going for at least another year.

You recognize the symptoms, don't you? Windows NT 5.0 is hopelessly out of control. It's a classic monster project run amok. It will never really be done — just declared finished someday when Bill Gates gets fed up with waiting for this cash sink to turn into cash flow and sets it loose on the world.

And if you've seen a monster project up close, you already know the only sane response: End it now Kill it.

NT is a monster project run amok . . . and the only sane response is to kill it.

Then dredge through the remains for anything you can salvage, and start fresh with a more workable approach — one that chops the project down into manageable pieces, gets them right one at a time and then makes them work together.

The irony is that Microsoft has been preaching the virtues of component development for years. Simplify software development by using our tools to build pieces that can be tested separately and then plugged together — that's the story Microsoft's marketers love to tell developers.

Even NT started with a clean, simple, modular design. That was back in 1991, when Dave Cutler unveiled Microsoft's New Technology kernel ("NT" for short) for a different crowd of reporters, reviewers and analysts.

But apparently that's no longer an option for NT's developers. Instead, they'll watch the days slip by as they pile new features ever higher, hoping that one day they'll have killed enough bugs that, despite the impossible complexity and uncertain quality, Jim Allchin or whoever succeeds him will finally sign off on. this monster.

And when that day arrives — after all that time and all those millions of debugging dollars — millions of users will be faced with a Windows NT 5.0 that's late, shaky and, at best, just . . . pretty good.

And that's something for Jim Allchin — and the rest of us — to *really* worry about.□

Hayes is Computerworld's *staff columnist. His* Internet *address is frank_hayes @cw.com.*

SHORTS

Air traffic system outage

The Federal Aviation Administration's Boston Center lost critical air traffic control flight-tracking information for 37 minutes on the evening of Aug. 20 because of a computer system outage. A backup system kicked in and provided air traffic controllers with rough locations of about 350 planes that were airborne at the time, said William Johannes, president of the local controllers' union at the FAA facility in Nashua, N.H. Johannes said the main control system, which is based on an IBM 3083 built in the early 1980s, failed. The FAA, in a statement, said air safety wasn't compromised and that the agency is investigating the system outage.

BP signs EDS to $300M pact

British Petroleum has signed up Electronic Data Systems Corp. to support 13,000 desktops and laptop computers worldwide. Under terms of the five-year, $300 million contract, BP will consolidate multiple help desks in the U.K., and EDS will act as BP users' single point of contact for help with E-mail, desktop videoconferencing and other desktop support services. BP said it expects to cut costs by 30% in the first two years of the contract.

Oracle acquisition

Oracle Corp. on Friday said it is buying Versatility, Inc., a Fairfax, Va., developer of call-center software that ran into such financial trouble earlier this year that its stock was delisted from the Nasdaq stock exchange. Oracle, which is paying about $12 million in cash and expects to complete the purchase by year's end, will mesh Versatility's outbound telemarketing software with Oracle's own customer service call-center application.

Color PalmPilot

Industry analysts said 3Com Corp. in Santa Clara, Calif., plans to introduce a PalmPilot with a color LCD screen for nearly $900 this fall, while discounting the Personal edition to about $150. The new device, code-named Razor, will also be thinner, analysts said. 3Com wouldn't comment. Analysts questioned why 3Com needs a color model that will zap battery life quickly.

UPI CEO moves

James Adams

James Adams, the flamboyant CEO at United Press International, who led an Internet-based push for delivering customized multimedia content to news customers [CW, June 22], has resigned from his post to assume the same title at Infrastructure Defense, Inc. in Washington. Adams said he would remain a director for the Washington-based news agency and would continue to be involved in day-to-day operations.

House delays H-1B vote

The U.S. House of Representatives last week failed to vote on a bill that would temporarily raise the cap on the number of H-1B visas issued annually to skilled foreign workers, despite speculation that it would vote before starting a monthlong recess this week. The White House has threatened to veto the House bill, calling for stronger protection for U.S. workers.

Sun, Microsoft seek a master

Sun Microsystems, Inc. and Microsoft Corp. submitted nominations to a federal judge for a special master to oversee pretrial disputes concerning which documents should be kept secret as the parties gear up to fight the lawsuit Sun filed accusing Microsoft of violating terms of its Java license. The judge hasn't announced a decision on the special master.

AS/400 gets E-commerce boost

IBM this week will boost its AS/400 lineup with a new 64-bit processor and enhanced capabilities for running electronic-commerce applications. The new processor, code-named Northstar, will improve performance by at least 50%, the company said. IBM is also integrating Secure Electronics Transaction (SET) protocol support for electronic-commerce applications and is enhancing the firewall capabilities for the server in a bid to make the AS/400 a secure platform for Web commerce.

SHORT TAKES Gartner Group, Inc. in Stamford, Conn., and **ICSA, Inc.** in Carlisle, Pa., have launched an Internet Security Exposure Analysis service. . . **Sun Microsystems, Inc.** announced last week that Java Development Kit 1.2 will ship in November instead of next month. . . **Netscape Communications Corp.** last week reported $88,000 in profits on revenue of $150.2 million for the quarter, up 18% from the same period last year. . . A Sept. 15 trial date has been set for Michael Lissack, 39, of New York, a former **Smith Barney** investment banker who allegedly harassed top executives at the company via fraudulent E-mail. . . Networking superpower **Cisco Systems, Inc.** last week announced plans to acquire Bedford, Mass.-based **American Internet Corp.** . . . **Pitney Bowes, Inc.** is moving into the secured Internet document delivery business, with a pilot project called iSend designed for secure file transmission via the World Wide Web.

No surge in demand seen for new Intel processors

▸ *Users say they're seeking standards consistency, not just lower prices*

By April Jacobs

AFTER A ROUGH first half of the year, Intel Corp. today will unveil two processors — one aimed at the low-end market it is struggling with, and one aimed at its forte, the power desktop. The chip maker also will give a pep talk about the aggressive PC prices it hopes will be a shot in the arm for the industry.

But despite new, cheaper, more powerful chips and other price cuts, corporate users aren't expected to change their buying patterns, buying multiple types of desktops based on the latest price cut or new chip leads only to support headaches, they say.

Intel is expected to announce a Celeron chip with on-board cache and a 450-MHz Pentium II chip, according to sources close to the company.

Mel Thomsen, an analyst at MicroDesign Resources, Inc. in Sunnyvale, Calif., said the new Celeron, code-named Mendocino, should help Intel gain back some market share in the sub-$1,000 market. That's because Intel's two earlier entrants into the market lagged in performance because of their lack of cache.

Thomsen said that even if Intel and the PC makers are able to drum up demand with lower pricing, Intel's revenue is likely to be flat this year. The company had revenue last year of about $25 billion.

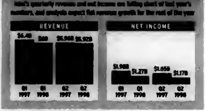
Though sales have been steady for both processors and PCs, inventory gluts resulting from PC overstocks made op a lot of sales in the first and second quarters of this year, Thomsen said.

Intel's announcement follows deep price cuts to its Celeron and Pentium II lines announced July 26. The cuts ranged from 19% to 31%, bringing the average Celeron processor to just $99 and the average Pentium II to less than $600.

Analysts said the upshot for users is lower PC prices. Some analysts have predicted monthly price cuts instead of the traditional quarterly ones issued by PC makers and have said the average drop will range from 12% to 19% per quarter. But it is questionable whether Intel's and PC makers' attempts to give desktop computer sales a boost by lowering system and component prices will be successful.

FALLING FLAT

Intel's quarterly revenue and net income are falling short of last year's numbers, and analysts expect flat revenue growth for the rest of the year



Source: Securities and Exchange Commission 10-Q reports

CONSISTENCY COUNTS

Low prices may not tempt users to change their buying patterns. That's because large corporate buyers say they buy based on internal standards. But some say they would be willing to buy on a price basis if the vendor is consistent. That means offering industry-standard components and peripherals, which lowers the risk of support and incompatibility issues.

"We made the mistake in the past of buying when the price was right or the latest thing rolled out. I think corporate end users are looking for a standard, which adds years of life to the product," said Dave Geiver, senior technology officer at First Premier Bank in Sioux Falls, S.D.

Corporate IT managers, noting that consumer boxes can cost up to $1,000 less than business models, also want lower PC prices.

Craig Hanson, network administrator at Deloitte & Touche LLP in Fairbanks, Alaska, said he thinks the gap will have to narrow if PC makers want corporate buyers to be satisfied. □

Even odds in antitrust suit

Antitrust lawyers said Intel has a good chance of winning its Federal Trade Commission antitrust suit. They remain split, however, on the subject of whether the Santa Clara, Calif.-based chip maker's weak share of the sub-$1,000 PC market will shore up that defense.

The fact that the company has competition not only in the Intel-based market but also in non-Intel markets strengthens its case, said Joe Sims, an antitrust attorney in Washington.

"There are other people who make chips," said Sims, who noted that because Intel has competition, it will be difficult to prove at least one key element of a monopoly: price-setting. However, the FTC could assert that Intel holds a monopoly in a more narrowly defined market — something that Intel has asked the FTC to clarify, Sims said.

Former FTC litigator Steve Newborn said Intel's declining market share — the result of stiff competition in the sub-$1,000 PC market — doesn't give it immunity from having a monopoly in other areas. — April Jacobs

---

Health care industry shares contingency plans

▸ *Survey compiles ideas about compliance*

By Stewart Deck

YEAR 2000

WITH THE COUNTDOWN to 2000 now less than 500 days and hospital CIOs still looking to quickly pull together their contingency plans, a Tennessee-based consultancy is compiling the results of an ongoing survey of health care technology experiences and plans.

Interdependence is "critical in health care," said Daniel Nutkis, president of Odin Group LLC, the Nashville research consultancy undertaking the survey, "and people now seem to want to talk to their peers and share war stories." Odin Group will make the survey results available free after publishing them in November, Nutkis said.

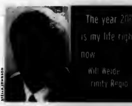
The group's survey comes as chief information officers in the health care industry recently called for widespread sharing of year 2000-readiness data about computerized medical equipment, from intravenous infusion pumps to life-support equipment [CW, Aug. 17]. Nutkis said 1,600 health care information systems professionals at hospitals, equipment makers and drug companies have expressed interest in sharing year 2000 compliance information.

In the past, health care outfits have been reluctant to share such contingency plans, but that's beginning to change. "People in health care have been afraid of the liability questions and haven't shared their [year 2000] status or strategies," said Larry Grandia, CIO at Intermountain Health Care in Salt Lake City. But, Grandia added, that reticence is fading.

Will Weider's mission these days is to discover which of the thousands of pieces of medical equipment in his hospitals need a year 2000 adjustment. "The year 2000 is my life right now," said Weider, vice president and CIO at Trinity Regional Health System in Rock Island, Ill.

And Weider has to know the extent of his equipment replacement costs within the next six weeks so he can budget for them. One potential upside: Trinity doesn't develop any technology in-house and will press its equipment suppliers for year 2000 status updates.

Even so, Weider estimates that as much as a third of his annual $1.5 million budget next year may be spent fixing, updating and buying equipment to replace noncompliant systems. Like Weider, many health care CIOs are also putting together year 2000 contingency actioo plans for dealing with machines and systems that can't be updated by Jan. 1, 2000, observers said.

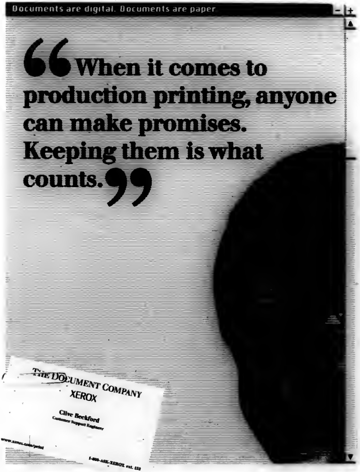


Stephanie Moore, an analyst at Giga Informatioo Group io Norwalk, Conn., said that even at this late date people can learn plenty from sharing their experiences. "Given how far behind the heath care industry is, [IS] people shouldn't be trying to reinvent the wheel."

Other health care year 2000 efforts have sprung up recently from the RX2000 Solutions Institute in Minneapolis and VHA, Inc. in Irving, Texas. Each of those databases compiles user data about vendors and equipment and makes the data available to subscribers.

Both have caught Weider's interest, but he said that the cost to subscribe can be prohibitive and that the nature of the data can't always be assured because the data is submitted anonymously.

Even with proper code cleanups and testing, health care firms can't rest easy. "We have hundreds of trading partners that we have to make sure are compliant, too," said Donald Morchower, CIO at Highmark Blue Cross/Blue Shield in Pittsburgh. "Seeing what other people are planning to do in case something fails would be very beneficial." □


Documents are digital. Documents are paper.
“When it comes to production printing, anyone can make promises. Keeping them is what counts.”
THE DOCUMENT COMPANY
XEROX
Clive Beckford
Customer Support Engineer
www.xerox.com/print
1-800-ASK-XEROX ext. 172

Talk is cheap, unless you back it up with serious commitment. Xerox provides all *DocuPrint Production Printer* customers with the exclusive Total Satisfaction Guarantee. It says our products have to meet with your total satisfaction, not ours. So we work toward giving you an incredible 98% uptime. Add to that Xerox's $1.7 billion in research and development and you're talking about very serious commitment. The kind that allows us to manufacture a line of production printers that are year 2000 compliant. After 24 years in production printing, our word counts. *Because the bottom line is uptime.* To learn more, call 1-800-ASK-XEROX, ext. 172.

THE DOCUMENT COMPANY
XEROX

See us at XPLOR, Nov. 10–12, Booth 803

Uptime based on actual service contract hours. XEROX,® The Document Company® the digital X® and DocuPrint® are trademarks of XEROX CORPORATION. 36 USC 380 www.xerox.com/print.

HP venture targets financial processing

▸ *Teams with Intria to offer networking service*

By Jaikumar Vijayan

CUSTOMERS SHOPPING for a systems integrator to handle technology services for financial processing and electronic-commerce applications have a new vendor to consider.

Hewlett-Packard Co. and Intria Corp., a wholly owned subsidiary of the Canadian Imperial Bank of Commerce (CIBC) in Toronto, last week announced a joint venture called Intria-HP.

The 750-person company will help customers in the U.S. and Canada build and manage highly available, secure systems and networks for activities such as financial processing services and electronic commerce.

"HP brings a very strong knowledge of intranet and Internet technologies" to the alliance, said Douglas Hern, vice president at President's Choice Financial, a financial services subsidiary of the Loblaw Cos. grocery store chain, based in Toronto.

President's Choice has used Intria's technologies and integration services for a year to help build a system that will allow Loblaw stores to offer customers a variety of banking services. "I feel we are going to be able to get a very good level of service [as a result of the partnership with HP] because of HP's experience in midrange platforms," Hern said.

Since it was spun out of the Canadian Imperial Bank of Commerce in 1996, Intria has built a business servicing retailers' electronic cash registers, PC banking and telephone banking. It also maintains a network of automated teller machines across Canada. Its customers include CIBC, President's Choice, WestCoast Energy and HMV Ltd.

On the systems side, the company's major expertise is in high-end areas such as IBM's MVS platforms, AS/400 platforms and Tandem Computer, Inc.'s nonstop servers.

HP brings to the table experience in client/server outsourcing, high-availability support services and systems integration, systems and network management tools and security technologies for electronic commerce such as those from its acquisition of VeriFone, Inc. last year.

"The deal positions HP much more firmly as a multivendor services company," said Dennis Wayson, an analyst at Dataquest in San Jose, Calif. "It also positions them well in the high-end transaction processing services arena."

In the short-term especially, the joint venture will be in a better position to compete against IBM in Canada, where IBM is a major player in the banking industry, said Gopi Bala, an analyst at The Yankee Group in Boston.

The joint venture will target customers in all of North America right from the start, HP emphasized. □

INTRIA-HP

Owners: CIBC and HP

Headquarters: Toronto

Employees: 750

Services offered: Mainframe/midrange systems management, network operations, automated teller machine and point-of-sale systems management, and desktop and LAN management

3Com lends a hand with virtual nets

▸ *VPN technology more complex than users think*

By Bob Wallace

BUILDING ON the soaring interest in virtual private networks (VPN), which are more complex than shooting data over the Internet, 3Com Corp. last week announced a menu of professional services to help out users.

With its Professional Services, 3Com will provide information systems managers an alternative to using their already stretched staff to support resource-intensive VPN tasks.

"Users need help with VPNs now because the technology is so new and because things like security also make them complex," said Troy Kent, an information technology consultant at Entergy Services, Inc., a Gretna, La.-based utility. "The bottom line is that these services are a very comforting value-add."

Entergy has been evaluating VPNs since they became available last year, but the utility hasn't moved ahead yet largely because of concerns about support. Kent said he is pleased with 3Com's approach of providing gear and professional services.

DELIVERING THE GOODS

"It's good to see a vendor put this much focus on delivering the end-to-end [package] rather than just talking about their VPN products," Kent said. He said he is interested in 3Com's VPN maintenance and monitoring offerings because Entergy plans to deploy a VPN to help cut remote access costs.

3Com's Professional Services menu includes project management, network design and configuration, installation, network management implementation, application engineering and systems integration. Twenty hours of the services — which can be customized — cost $5,000.

"This announcement is great because VPNs are a lot more complex than users think, what with security [options] and technologies like tunneling," said Deb Mielke, an analyst at Tele-Choice, Inc., a consultancy in Tulsa, Okla. "Trying to do everything yourself would be very tough. I'm a big believer in the professional services [approach]."

3Com is the first VPN vendor to launch a professional services program specifically for these networks, Mielke said. She said she expects others will follow suit. □

3Com's VPN Professional Services include:

- **Project management:** Implementation plan, site testing and post-project review
- **Network design and configuration:** Will design and configure the VPN
- **Installation:** Will unpack, inspect and load software and confirm configuration
- **Network management installation:** Will install and configure software and provide guidance on systems features
- **Applications engineering:** Will custom-design software for compatibility with unique customer applications
- **Systems integration:** Will configure and test a VPN before implementing to ensure easy installation

Source: 3Com Corp., Santa Clara, Calif.

Vanstar service aims at help desk issues

By Julia King

NEXT WEEK, Vanstar Corp. will announce a suite of integrated desktop management services for companies that want to have their cake and eat it, too.

Customers of the Atlanta-based vendor's new Plug-Compatible services retain ownership and control over their information technology help desks but farm out more disagreeable tasks — such as hardware repair and emergency deskside services — to Vanstar.

One of the most valuable benefits is that all tasks are logged and tracked via a single, integrated help ticket, giving users a single point of contact for all services.

Other services Vanstar will handle under the new offering include PC lease management and administration, asset management, electronic software distribution and buying, and configuration and installation of new PCs.

The service costs between $40 and $60 per user per year, depending on the type and number of tasks that users outsource. Contracts are for a minimum of three years. The service is aimed at companies with between 3,000 and 30,000 desktops. So far, Vanstar said it has signed up two major customers — MCI Communications Corp. and Lockheed Corp. — for the service.

The Vanstar [illegible]
[illegible]
tasks [illegible]
integrated [illegible]
[illegible]
[illegible]
all ser[illegible]

"Our belief is that while a customer can staff their own help desk and have their own [help desk call reporting and tracking] system, there are still a number of pieces that don't get included at that single point of contact," said Dick Anderson, a vice president at Vanstar.

"For example, if someone calls the help desk from Spokane that their printer is smoking, a help desk [in Atlanta] can't solve that problem on the phone. But they can route those calls to us, and we'll fix them while all the time keeping the customer's in-house help desk system updated," Anderson said.

MORE SUPPORT

Elena Christopher, an analyst at Gartner Group, Inc. in Westboro, Mass., said the Vanstar service is aimed at users who may already have purchased help desk systems but now need additional operations support.

"There's a fair number of customers in a middle stage where they're sophisticated enough to know there's great value in buying an integrated service, but they're not willing to give up control of their help desk or network operations center," Christopher said. □

intel inside
pentium II
KEEP TRACK OF ALL
DESKTOPS FROM ONE

YOUR
DESK

Early 2000 glitches warn users

CONTINUED FROM PAGE 1

of companies polled have already experienced some type of year 2000-related disruption. Problems included processing errors, financial miscalculations and customer-service disruptions, according to an ongoing survey of 128 executives conducted by Cap Gemini America. The survey was updated last month.

BENEFITS

But screwing up early has its rewards. Just ask Bob Vis, year 2000 coordinator at the $6 billion Amway Corp. in Ada, Mich.

About nine months ago, a PC-based mixing system in one of the company's plants rejected a batch of chemicals for a cleaning product because its expiration date of 2000 appeared to the system to have lapsed. The system read the 2000 date as 1900. And in mid-1996, a mainframe-based, five-year forecasting system quit forecasting beyond three years, eight months.

Neither failure brought the company to its knees. Plant workers manually overrode the mixing system, and programmers have since fixed the forecasting system.

Instead, Vis said, the snafus actually worked in his favor.

Before the failures, "senior management's attitude was that 2000 was a long ways off, and we'll fix it later," Vis said. "When they found out that some stuff was actually failing, they figured they better look more closely."

Now managers from manufacturing and facilities operations are part of the year 2000 project team. Amway also has set up an on-site coding factory, where about a dozen contract programmers are fixing the company's primarily mainframe-based Cobol applications.

Bob Vis said early snafus helped Amway managers realize that January 2000 isn't very far away.

"For most companies, all it takes is one good failure, and they get religion right away," said Lou Marcoccio, an analyst at Gartner Group, Inc. in Westboro, Mass.

Prime candidates for pre-2000 glitches include applications that have expiration dates, coverage dates, contract terms, project completion dates, delivery dates, payment schedules, age and birth dates, release dates, notification dates and graduation dates.

Even systems that haven't already had a year 2000 problem may encounter trouble in 1999, when budgets and sales forecasts look ahead one year.

So far, most of the failures have been isolated. Companies have worked hard "to keep a lid on them. [Companies] don't want any loss of confidence on the part of investors or customers," said Noah Ross, a vice president at Cap Gemini in Tarrytown, N.Y.

But some early glitches have been serious.

Last year, the year 2000 bug hit the agency that supplies food, fuel, medicine and clothing to the U.S. military, according to a congressional report. A date calculation error in the Defense Logistics Agency's materiel management system simply dropped 90,000 items from the inventory. Correcting the problem took 400 hours.

EARLY PROBLEMS

Because of its reliance on so many calculations and forward-looking systems, the financial services industry was hit by the first wave of year 2000 snafus.

Until recently, retail point-of-sale systems couldn't read credit cards with "00" expiration dates.

As consumer complaints increased, Visa International, Inc. banned member banks from issuing credit cards with expiration dates beyond 1999. Visa lifted the ban last October, once most of the buggy card readers had been fixed.

Early point-of-sale failures led to what is believed to be the first year 2000-related lawsuit. Produce Palace International in Warren, Mich., filed suit last July because its computerized cash registers crashed when customers used credit cards with expiration dates in 2000.

The suit was filed against Atlanta-based TEC America, Inc. and a local service vendor that had installed the system in 1995 with assurances to Produce Palace co-owner Mark Yarsike that it would serve his needs for at least the next 10 years. But within three weeks of its installation, the system began to fail, crashing more than 100 times and rendering the cash registers useless.

"It was very costly and very stressful and very embarrassing," said Yarsike, who said he had to hire additional employees to keep the books by hand while the computer was down.

His lawsuit is still pending. The defendants made an offer to settle, but Yarsike said he refused. He plans to proceed with the litigation. TEC America spokesman Jeff Warren confirmed that the lawsuit is ongoing but declined to comment on specifics of the case.

FORWARD-LOOKING FIRMS

Some life insurers began tweaking policy administration systems as far back as the 1980s to support 20- and 30-year insurance policies. Companies "have run into trouble with three-year annuities and other date-sensitive systems, but they weren't major problems," said Lynn Ganim, a senior associate at LOMA, Inc., an Atlanta-based financial services trade association with 900 members.

A silver lining is that the glitches helped insurers track down isolated problems quickly instead of having to scramble in January 2000, she said.

Early detection of a problematic certificate of deposit system helped BankBoston's millennium project team "break through some of the denial" of the problem within its management ranks, said Steven McManus, communications manager for the team.

During a 1996 checkup of systems at Rhode Island Hospital Trust, which BankBoston acquired in November 1985, BankBoston found that date problems with the bank's Cobol mainframe-based system could have created two potential snafus: Customers wouldn't have received their maturity notices, and CD accounts falsely recognized as 100 years old would have been put in a lost-and-found bin and transferred to the state.

Early discovery of a problem helped BankBoston "break through some of the denial"

The catch "was a real eye-opener," McManus said. The bank converted the CD system to BankBoston's year 2000-compliant mainframe platform in June.

Allstate Insurance Co. in Northbrook, Ill., is capitalizing on failures that go back as far as 1990 by selling the software it developed in-house to fix date problems in its massive policy processing system. The date problems showed up so early because many customers' policies and loans extend into 2000 and beyond.

Supervalu, Inc., a $17 billion food wholesaler in Minneapolis, crossed its first year 2000 "failure horizon" on Feb. 28, said Fred Knotek, year 2000 director. That's the day the wholesaler's mission-critical forecasting system would have failed if Knotek's 60-person year 2000 team hadn't organized its work by that failure date.

Two years ago, a joint team of technology staffers and business users went through each of Supervalu's critical applications to determine when initial failures would occur. Since then, the company has outrun glitches that might be triggered by a year 2000 food expiration date, for example, by fixing systems in order of their break deadlines.

"As a result, we've been able to avoid problems before they occur," Knotek said. His advice: "Really know your applications in terms of when exactly it will fail, prioritize accordingly and do remediation and testing well in advance." □

Some year 2000 problems that have already surfaced include the following:

A distributor in the U.K. trashed thousands of dollars worth of perfectly good food with expiration dates that appeared to the system to have already lapsed.

An auto manufacturer halted production to replace working components in assembly line equipment because a computer system inaccurately deemed it time to replace them.

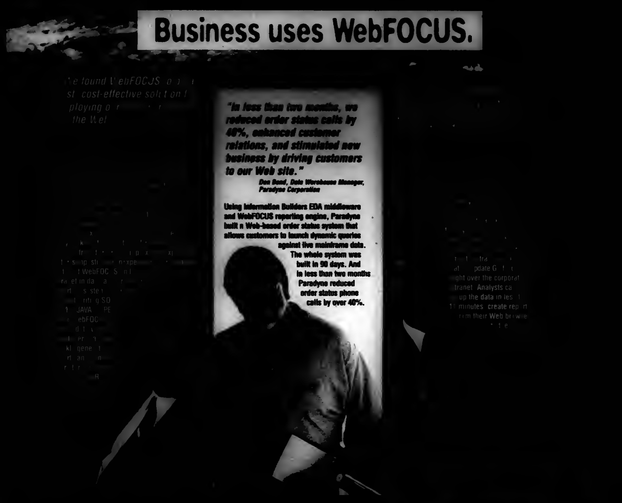
Credit-card processing and point-of-sale systems have failed because of credit cards with expiration dates that extend beyond January 2000.

Other systems at risk for pre-2000 failure:

- Mortgage origination and loan systems for long-term loans that extend beyond the year 2000.
- Systems that support five-year product maintenance warranties.
- Insurance companies unable to process 20- and 30-year policies.

Source: Computerworld research; Gartner Group, Inc., Stamford, Conn.

ILLUSTRATIONS BY MARTY BRAUN



Who we are

Taking a look at Microsoft's antitrust vulnerability

The U.S. vs. Microsoft Corp. You've heard how both sides plan to present their cases regarding Microsoft's business tactics with Windows 98 and the Internet Explorer Web browser.

If the government prevails in its claim that Microsoft wields – and abuses – monopoly power in the PC operating system market, the door opens for other companies to sue the vendor, several lawyers said.

But what does it mean for the rest of Microsoft's product line? We interviewed computer, legal and economic experts, along with corporate users, to devise this snip-and-save guide to Microsoft's future.

The outcome of this trial, slated to start Sept. 23, could ripple through Microsoft's product line. For example, if the court rules that Microsoft can't add Web browsing features to the Windows operating system, Windows NT is also vulnerable, as CEO Bill Gates himself noted when the antitrust suits were announced in May [CW, May 25].

One thing is sure: Microsoft now lives in a fishbowl.

– Kim S. Nash

PRODUCT	MARKET SHARE AND RIVALS	WHERE IT STANDS	IN COURT NOW?	ANTITRUST EXPOSURE?	CONVENTIONAL WISDOM
Internet Explorer	Netscape Navigator 54% Internet Explorer 45%	Offered free, which forced Netscape to do likewise. Then Microsoft added it to Windows 98	Yes	Yes	The product that started the current round of antitrust fuss
Windows 98	Of PCs shipped last year, 91% were equipped with Windows. About 19.7 million units to sell by year's end, IDC predicts.	At the heart of the current antitrust suit; not intended for business users	Yes	Yes	Been called everything from too buggy to "critical" to the U.S. economy. Dismissed by business users as not being a key upgrade.
Windows NT Workstation	Outsold Unix workstations two to one last year, IDC says. 9.2% market share in 1997.	Microsoft wants all new business PCs sold next year to come with NT Workstation	No	Possible	Microsoft's plan is to meld Windows 98 with NT. Any operating system restrictions that come out of the antitrust trial would apply.
Windows NT	Version 5.0 due mid-1999. Unix flavors and Novell NetWare are rivals. NT had a 39.8% share in 1997 compared with 27.2% for NetWare.	New version is late but central to enterprise push. In suit filed last week, Bristol Technologies said Microsoft has withheld access to NT APIs.	Yes	Yes	Trustbusters haven't ruled out an NT investigation; Microsoft itself has warned that plans to integrate Internet and other features into NT 5.0 could trigger more legal scrutiny.
Windows CE handheld operating system	Rival 3Com PalmPilot has 63% of palmtop market to 26% for Windows CE	Nest year's upgrade to include real-time features; aimed at embedded systems such as printers	No	No	Microsoft's entry may force 3Com to cut PalmPilot's $400 price tag
Windows Terminal Server	Just shipped in June. Sun's JavaStation, IBM's Network Station are rivals.	Microsoft's answer to the network computer	No	No	Aimed at replacing mainframe and microcomputer dumb terminals; isn't as flexible as other thin clients
Visual J++ and other Java tools	Sun's Java platform and various other vendors' tools are rivals. Microsoft claims that half of Java developers use J++.	Microsoft temporarily barred from using Java logo	Not part of the antitrust suit; Sun is suing Microsoft over a Java contract dispute	Possible; federal lawyers mentioned Microsoft's use of Java in the antitrust complaint, but no charges were made	Microsoft gets top marks for quick compiler. Sun says Microsoft has tweaked Java to favor Windows.
Office productivity suite	Lotus SmartSuite, Corel Office are rivals. Microsoft owns 93% of market.	Upgrade, dubbed Office 2000, in beta now; to ship next year	No; dropped from states' antitrust suit	Yes; states could pursue original complaint	States' complaint alleged Microsoft used Windows dominance to push Office sales
SQL Server database	Oracle is market leader with 27.5% share; SQL Server has 14.9%	Version 7.0 upgrade is in beta now; due next year. Goal: 50,000 database administrators trained and 300 supporting independent software vendors at launch.	No	No	"We have an incredibly tough competitor" in Oracle, acknowledged Jeff Raikes, head of sales at Microsoft
Exchange	At 9.5 million seats, Exchange has half the installed base of Lotus Notes, IDC says. But Microsoft sold 3.5 million Exchange units in the first quarter to Lotus' 2.7 million, another market watcher said.	Upgrade, code named Platinum, due by the end of next year.	No	No	Gaining in market share, but Notes offers more features. Exchange's growth has come at the expense of other E-mail systems, not Notes.
NetShow and other multimedia software	Netscape's Netcaster; Apple's QuickTime; RealNetworks' RealAudio and RealVideo	RealNetworks accused Microsoft at a Senate hearing last month of purposely disabling RealNetworks software	No	Yes	If the government proves that Microsoft holds monopoly power in Windows, then anything integrated into any operating system will be scrutinized
Web properties, such as msn.com portal and CarPoint	Microsoft claims that the number of visitors to its sites gives it the No. 3 slot in online traffic measures, behind America Online and CompuServe	Microsoft is one of several big online players; properties aren't yet profitable; success may lie in next year's new portal plan	No	Possible	"There isn't actual anticompetitive conduct there yet," says antitrust lawyer Rich Gray. But plenty of electronic-commerce merchants are worried, and the states left this avenue open.

Sources: Computerworld research; Zona Research, Inc., Redwood City, Calif.; International Data Corp. (IDC), Framingham, Mass.; Dataquest, San Jose, Calif.; Workgroup Strategic Services, Inc., Portsmouth, N.H.; "Electronic Mail and Messaging Systems" newsletter, Stamford, Conn.

Users falling behind IBM's upgrade cycle for OS/390

▸ *New features come twice a year, but shops don't move that fast*

By Jaikumar Vijayan

THE PACE at which IBM is churning out upgrades to its OS/390 operating system is quickly bringing new levels of functionality to mainframe users.

But the traditionally long software upgrade cycles at most mainframe shops combined with the testing required for new software are making it hard for some users to stay current.

IBM last week announced availability of the latest iteration of OS/390 — Version 2 Release 6. New features include the following:

- An integrated World Wide Web application server.
- Performance enhancements that provide better support for Unix applications on S/390 mainframes.
- Enhanced encryption features for electronic-commerce applications.
- New management capabilities for clustered Parallel Sysplex environments.

OS/390 basically bundles IBM's earlier MVS operating system with mainframe applications and functions formerly sold separately.

The latest enhancements support IBM's strategy to get users to try applications on their mainframes, said Fred D. Kolb, a technical support manager at the state of Missouri's data center in Jefferson City.

But the state — which has only just started upgrading to the older Release 5 — will most likely skip Release 6. "It's just the length of time it takes to test everything" before moving to a new release of an operating system, Kolb said.

Similarly, an internal three- to four-year software upgrade cycle means that it will be another two years before Metropolitan Life Insurance Co. implements some of the newer features in OS/390, said Bruce Williams, an information systems specialist at the New York insurer.

Part of the reason is the sheer effort involved in upgrading to new versions of an operating system as well as testing applications running on it for a company the size of Met Life, Williams said. "We also don't want to be on the bleeding edge of anything," he added.

Such issues aren't unusual in the mainframe space, said Susan Puglia, vice president of software development at IBM's OS/390 group. OS/390 has more than 70 integrated applications, but nonetheless many users run other vendors' applications, which need to be tested every time the operating system is upgraded, she said.

IBM's latest move is part of its strategy of upgrading OS/390 every six months. The company adopted that upgrade schedule when OS/390 first shipped in early 1996. Before that, IBM's mainframe operating system upgrade cycles typically ranged from 18 to 24 months, Puglia said.

Of the 9,000 OS/390 licenses IBM has sold, there are still 5,500 licenses in use for the last release of Version 1. About 13,000 users still use the MVS operating system.

The shorter upgrade cycles let IBM integrate new functionality into the operating system quickly, giving users a better idea of planned enhancements, Puglia said. □

QUICK STUDY

HOT TRENDS & TECHNOLOGIES IN BRIEF

Check out *www.computerworld.com/more* for more resources, *Computerworld* articles and links.

JavaBeans

DEFINITION: JavaBeans, developed by Sun Microsystems, Inc., are programming interfaces used to create blocks of reusable, prebuilt code. JavaBean components can be dropped in to an application, linked together with other JavaBean components or used to connect applications. By using JavaBean components, developers can reduce the amount of code they have to write. Developers can create their own JavaBean components, buy them from independent software vendors or use JavaBeans that come bundled with popular tools.

BEANBAG

VENDOR	TOOL	NUMBER OF JAVABEANS IN THE TOOL
IBM	VisualAge for Java	Over 90
Inprise Corp.	JBuilder	Over 100
Oracle Corp.	JDeveloper	Over 100
Sun Microsystems, Inc.	Java Studio	Over 50
Sybase, Inc.	PowerJ	105
Symantec Corp.	Visual Cafe for Java	Over 100

VENDOR	JAVABEAN	WHAT IT DOES
Athena Design, Inc.	Integer	Creates spreadsheets
KL Group, Inc.	JClass LiveTable	Creates grid/table for data-driven display
Object F/X Corp.	SpatialX Map Viewer	Creates maps

Internet is helping to drive component technology

By Carol Sliwa

CAN APPLICATION BUILDING really be as easy as assembling Legos?

Well, maybe not that easy, but that's the concept behind JavaBeans. Blocks of prebuilt code — which are the JavaBeans — can be snapped together to build all kinds of applications.

For example, when developers want a special kind of button, they don't have to reinvent the wheel each time. After creating the JavaBean for the initial purpose, developers can drop it in to another application to create that same button.

AT ISSUE

Will JavaBeans extend to the server side?

COMPONENT APPROACH

"The reason businesspeople are interested in component technology is that you can get your products to market much more quickly and that puts money on the bottom line," says Mike Gilpin, an analyst at Giga Information Group in Cambridge, Mass.

In the past couple of years, the Internet has been a key driver of the Java-based component approach; it's becoming increasingly common for applications to be distributed across the network. Part of the application runs on the client, part runs in the middle tier — which can include an application server — and another part runs on a back-end database server.

Ernst & Young LLP's Advanced Development Center, which builds Java applications for large firms, uses JavaBeans on the client and server. The firm typically uses JavaBeans that come with tools or third-party components, says senior manager Catherine A. T. Susch.

To date, JavaBeans mostly have been used to build the visual interfaces to World Wide Web-based clients, with little happening on the server side.

But David Smith, an analyst at Gartner Group, Inc. in Stamford, Conn., says he expects to see a shift toward the server in the coming months. That will drive many users to consider a new type of JavaBean, called Enterprise JavaBeans.

Like the original JavaBeans, Enterprise JavaBeans are components that can be assembled to build applications. But their specification is different — they make it easier to build business systems and are more oriented toward back-end services such as messaging, security and transaction processing (see box below). ☐

FAQ: Enterprise JavaBeans

Q: What are Enterprise JavaBeans?

A: Enterprise JavaBeans are blocks of reusable, prebuilt code or components that will run on the server. Like JavaBeans, they can be assembled in Lego-like fashion to create applications, reducing the amount of plumbing code that developers need to write.

Q: Are any Enterprise JavaBeans available now?

A: Information Builders, Inc. last week released three Enterprise JavaBeans. Developers also are starting to write server-side components to conform to the specification so that when Enterprise JavaBean-compliant server products arrive on the market, their reusable components can run on those products.

Q: When did Enterprise JavaBeans hit the scene?

A: Sun released the specification — the detailed technical blueprint for the way reusable components will run on the server software — in March.

Q: What can Enterprise JavaBeans be used for?

A: They can be used to package an essential business function of an application, such as database access, transaction processing or security. For example, an Enterprise JavaBean can be used to search a database or alert users when inventory is running low.

Q: Which companies have pledged support for Enterprise JavaBeans?

A: A wide range of firms have said their products will support Enterprise JavaBeans, including the following:

- Bluestone Software, Inc.
- Gemstone Systems, Inc.
- Informix Corp.
- IBM
- Inprise Corp. (formerly Borland)
- NCR Corp.
- Netscape Communications Corp.
- Novell, Inc.
- Oracle Corp.
- Persistence Software, Inc.
- Sybase, Inc.
- Symantec Corp.
- WebLogic, Inc.

■ *Are there technologies or issues you would like to learn about in QuickStudy? Send your ideas to QuickStudy editor Stefanie McCann at* ***stefanie_mccann@cw.com***

OPINION

Spin cycle This fall, we'll witness the ultimate attempt at spin control from a very controlling company. In so doing, the real payoff for Microsoft may be seriously damaged credibility — even if it wins.

Nobody revises history quite like Microsoft. But recasting OS/2, explaining away LAN Manager and snubbing Java was child's play compared with the two-pronged challenge now facing the company's spinmeisters. Next month in federal court, the company will attempt to fight off antitrust charges, and throughout the remainder of the year, it will try to reset customer expectations for NT 5.0.

At an NT workshop last week, Microsoft vice president and chief architect Jim Allchin kicked off what is likely to be a season of backpedaling on NT 5.0.

Not only did Allchin downplay the strength of NT 5.0 — noting that "NT 5.0 is not the be-all, end-all" — but he also suggested that it was the media, not Microsoft, that had incorrectly set user expectations. Along the way, he contradicted his earlier statements about the operating system (see story, page 1).

That's just business as usual for Microsoft. When product delivery or previous strategic road maps are in doubt, deny the past and recast the future!

But can even Microsoft convince the court that the very market we've all been reading and writing about for years never existed? Court papers filed two weeks ago make it clear Microsoft will attempt to do just that — and more.

Microsoft will argue that there is no such thing as a PC operating system market. (And how long has it been missing?) Instead, it claims that there's a single market consisting of all operating systems for all computers.

Microsoft also told the court it can't control operating system prices. If you need proof of how ludicrous that is, ask any hardware OEM how much control they have over what they use, or how much they pay for a PC operating system.

If you think President Clinton takes an interesting approach to the truth, consider the above defense. Even a first-year law student could blow holes in Microsoft's argument. Rather than falling for this blatant exercise in revisionist history, the court should tell Microsoft to find another way to prove its case, one with at least one foot in reality.

Patricia Keefe, *news editor*
Internet: *patricia_keefe@cw.com*

TELL ME YOUR SEXUAL HISTORY.
Relationship in the '80s
TELL ME YOUR SUPPLIERS' Y2K HISTORY.
Relationship in the '90s

LETTERS

Dell customer service experience proved totally frustrating

I READ MARYFRAN Johnson's editorial about the high-quality customer service at 3Com with interest ["Service shocker," CW, July 6].

I know *Computerworld* has heard about all kinds of bad service, and I would like to add my recent experience with Dell computers. I bought a top-of-the-line Dell machine after much research into the home PC market. The best feature was supposed to be the in-home next-day services and 24-hour support line.

Well, Johnson's 10 minutes and a dozen automated voice-mail prompts at 3Com would have seemed like a miracle to me. I first started my contact with E-mail, but after several weeks and several letters — with no solution — I decided to use my 24-hour support line.

I was put on hold for 94 minutes! Then I spent the next two weeks being promised new hardware. Then I went through the condescending techno-babble (they tried to tell me it was all the fault of Windows 95). I even contacted Dell CEO Michael Dell via E-mail. After much frustration, I have returned the computer and have heard no apology from Dell. Now I start looking for a new system all over again.

Ten minutes in voice mail? A miracle!

Susan Beasley
Jonesboro, Ark.
beasley@bscn.com

Gateway tech support lauded

JUST THOUGHT you would like to know another positive support experience, only mine was with Gateway.

We have about 100 computers, and our sales representative has provided us with their corporate technical support. I have found almost all of their tech reps to be knowledgeable. Replacement parts are usually here the next day, even if damage was most likely caused by us.

Steve Powell
Manager, PC systems and support
Audio-Technica, U.S., Inc.
Stow, Ohio
spowell@atus.com

Foreign workers in U.S. paid more than Americans, by law

IN SEGASO to the letter from Jayant Chaudhary in *Computerworld*'s July 6 issue [" 'Cheap' foreign labor is doing just fine, thank you"], I may be jealous of his six-figure salary, but it appears he's the sort of expert for whom temporary work visas were designed. But I question his statement that all foreign workers are paid what average U.S. workers are paid.

In fairness, a temporary visa for a job must pay 10% above the national average for similar work, with that determination to be made by the U.S. Department of Labor. Foreign nationals who wish to remain in the U.S. for extended periods should obtain permanent visas, which should be distributed based on the applicant's skills. This would tend to raise the skill level (and wages) of workers of all nationalities.

Roy Schweiker
Independent consultant
Concord, N.H.
roy.schweiker@juno.com

Too quick to blame AS/400

THE STORY in your Corporate Strategies section ["Payment system saves builder's time, CW, July 13] seemed to indicate that the AS/400 was the cause of all the problems at the construction company in the article. What is most interesting is that the software was described as 10 to 15 years old. If that is truly the case, what operating system was it designed for? Since the AS/400 hardware and OS/400 operating system are only 10 years old, it must have been designed for another system — probably the IBM System/36.

Couple an ancient application with a staff that was probably given no resources for training or enhancing the system, and you end up with an antiquated piece of junk. Now management wants Windows NT, so they buy new hardware. This sounds fairly stupid since the AS/400 will run NT and is more reliable than the currently available PC hardware. All in all, it sounds like an attempt to cover up poor management.

Bob Larkin
Consultant
Houston
blarkin@wt.net

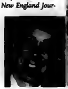
Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Occupational hazards unmasked!

Bill Levine

Every occupation has its hazards. Lawyers go on humility binges. Postal workers suffer from dog bites and homicidal tendencies. Channelers face secondhand bad karma.

But what's the worst an IS professional has to worry about? A swivel chair spinning out of control and knocking coffee onto his lap? Hardly! I've combed articles rejected by the *New England Journal of Medicine* and come up with the following IS-related occupational hazards. After reading this column, many IS professionals will want to seek a safer position — as a mercenary soldier, perhaps, or a parachute tester. Maybe even a presidential adviser.



Boolemia? Toxic schlock? These occupational ailments may afflict even the heartiest IS pro.

Boolemia. The boolemic constantly regurgitates complex "and" and "or" structures in his speech and thought processes, which makes life overly complicated. A typical boolemic: IF (popcorn buttered) and (Julia Roberts stars in) and not (Paulie Shore) OR (art film) and (Sly Stallone has cameo) or (body count > 100) see movie.

Algolholism. Sufferers can't stop writing Algol programs, even though no one has sighted a working Algol program since 1977. Victims spend their days rummaging through old computer output recycling bins looking for a line or two of pure Algol code. The best treatment? Wean addicts off Algol with a synthetic derivative called Cobol.

Hacking cough. An incessant seal-like bark, it's often precipitated by an FBI interrogation of three to five hours and may be exacerbated if the latest killer computer virus is named after the suspect's girlfriend.

Post-traumatic stress test syndrome. Strikes dedicated system testers who do their utmost to break unyielding online systems. The trauma of an intact system after the tester has pounded keyboards, thrown coffee at the PC and fruitlessly applied the latest cryptography is sometimes too much to handle; traumatized testers may suffer flashbacks just by punching in at an automated teller machine. The only cure is to break a system. And with year 2000 looming, there's hope that a magic bullet will be found.

Unemployed coder's eye. A rare condition in which the IT professional can't pick up misplaced periods in programs, resulting in numerous abends. The remedy is to strength-train eyes by watching ice hockey, which features a highly mobile, period-like dot called a puck.

Toxic schlock syndrome. Germinates from an IS shop's purchase of a turnkey vendor package that, upon closer examination, performs only one function: opening Pandora's Box without a close routine. Toxic schlock can poison the atmosphere of an entire IS organization as demoralized staffers call in sick (of work). A highly recommended antidote is to never buy a client/server package retailing for $99.99.

Sleeping sickness. IS workers with this ailment fall asleep right at their PCs. Not even a six-pack of extra-caffeinated cappuccino can prevent a victim from nodding off at work. This unnatural slumber is usually caused by either working at a start-up Internet company in any city whose name begins with "San" or reading footnotes in product documentation.

Object disorientation. Encountered by mainframe developers when faced with object-oriented tasks. One victim describes the illness this way: "You get dizzy, all the drop-down menus appear stuck, dialog boxes begin to talk back to you, and radio buttons start giving you a lot of static."

Doctors say the best way to fight the affliction is to put your head between your legs and repeat, "It's only a passing technological fad. It's only a passing technological fad. . . ." □

Levine is a writer in Belmont, Mass. His Internet address is petestrian@aol.com.

Users' reluctance about intranets makes sense

Michael Schrage

People aren't irrational. They always have reasons for doing what they do — no matter how silly those reasons may seem. We may not like or agree with the reasons, but that doesn't mean they can be dismissed cavalierly.

That's why I always listen carefully to the reasons people use to explain away business choices that I think don't make much sense. I hear many companies — particularly in the intranet space — voice bitter frustration over how difficult it is to get corporate customers to test their digital innovations. After they do their demonstrations, I often agree with them: Their products are precisely the sort of apps that innovative organizations *should* be testing.

Even two years ago, I would have blamed this corporate unwillingness on either organizational inertia or sheer, unadulterated laziness. There's still no shortage of self-destructively lazy companies. However, having spent lots of time with first-rate organizations with world-class IS departments, I found myself hearing a recurring reason that goes a long way toward explaining this seeming aversion to promising innovations.

That reason is soberingly rational. It also signals a trend that threatens to dramatically slow the rate of intelligent adoption of productive innovation. There's no straightforward or inexpensive solution to the problem, which will get far worse before it gets better.

What I hear smart end users — not just IS departments — saying, is that they're nervous to the point of being frightened of new browser-based apps that ride resident on their desktops or servers. Why? They're scared of having their machines freeze up or crash three or four times per day instead of once or twice. They're tired of consistently losing time and data the first couple of months a promising app is ported to their machines. And they're tired of being told by their IS folks that there's nothing they can do about it — that the problem is not a bug or bad design but rather the inherent volatility and instability of the platform.

It isn't that sophisticated end users are averse to innovation or unwilling to modify their behavior to exploit new digital opportunities — they just don't trust the reliability and robustness of their platforms. They're understandably unwilling to upset the fragile ecology of their digital support systems for the promise of productivity that can destructively pollute their PC. The cost/benefit ratios just aren't there. Even extensive IS testing can't hope to capture the conflicts and collisions that new software introductions might inflict on innocent users. So rollouts have to be handled with greater care and less urgency.

The applications are great, but who wants their machine to freeze up four times a day?

The ultimate result? Fewer innovations over a greater length of time.

Does this situation make a Microsoft, a SAP, an IBM or a Netscape happy? I honestly don't know. It certainly makes the growing swarms of enterprise intranet start-ups nervous. The fragile complexity of PC/intranet platforms becomes shockingly vulnerable as an enterprise scales from scores of users to thousands. It becomes risky when you factor in customers, clients, vendors and suppliers from outside the enterprise. If this industry continues on its present course, "business opportunity" and "technical reliability" will become sworn enemies instead of necessary complements.

There's nothing more dangerous than a good reason. □

Schrage is a research associate at the MIT Media Lab and author of No More Teams! *His Internet address is schrage@media.mit.edu.*

Apple turnaround is a Jobs well done

Bill Laberis

I can count on one hand — without affecting my typing speed — the number of times I've praised a computer industry executive in an open forum. That said, the IT community owes a debt of gratitude to Apple's mercurial and dogged interim CEO, Steve Jobs.

No, I don't expect any of you will put a hold on the 400-MHz Pentium IIa you've ordered for your corporate users in favor of Apple's snazzy new IMac. Nor do Apple and Jobs' rise from the ashes necessarily mean that Apple will regain what used to be a strong niche presence in the enterprise (though I wouldn't bet against it, either).

If nothing else, the birth of the IMac means there's still a force out there that can compete against the staid Intel-based PC world — albeit in the consumer space for the time being. Real innovation in the PC space is alive and well. And where competition and innovation thrive, consumers (at home or in the enterprise) benefit.

IMac is a wake-up call to a sleepy PC industry, and the mercurial Jobs deserves credit.

People such as Bill Gates and Intel's Andy Grove surely don't underestimate Steve Jobs. While he didn't invent the graphical user interface, he made it usable for millions of consumers years before the Wintel duopoly could.

It wasn't Jobs who set Apple on its recently reversed skid as much as his successor John Sculley, who refused to broadly license Macintosh technology. Sculley was succeeded by the hapless, bumbling Gil Amelio, who appeared to personally drive the final nail into Apple's coffin — never mind his apologia of a memoir or his claim [CW, July 27] that the company's present resurgence is a result of an Amelio grand plan.

This is still an industry in which ego and individual drive — as well as innovation — count. Jobs' unflinching confidence, even his showmanship, have keyed a resurgence of optimism at Apple and among its formerly distraught dealers. The IMac itself sports the first truly distinctive basic design changes to the PC in years, while staying loyal to its ease-of-use pedigree. I guarantee you will end up supporting them in your users' home offices.

By contrast, what innovations can you cite in the Intel PC business, other than those owing to Moore's Law? Dell, the fastest-growing PC maker in the past five years, doesn't so much make PCs as assemble and market them. Most innovation in the PC market is directed at imitating Dell's brilliant distribution strategy. Now the Wintel crowd has to at least wonder what Jobs might have in mind beyond the IMac. In a world of bloated inventories and thin profit margins, Apple sits atop a pile of IMac advance orders — for a floppy disk-less, odd-looking machine that sells for $1,299, no less.

True, some order-makers are Apple diehards fired by pent-up demand. But most "Mac nuts" aren't nuts at all: They're just people who believe the Macintosh was the best, most complete, friendliest PC available. What does Jobs know that the Wintel world doesn't?

I'm not suggesting that Jobs' vision includes trying to replace the PC as the corporate standard, or even mounting any kind of enterprise attack. I do believe that Apple's re-entry into the computer market with a viable and attractive offering will be a wake-up call to a PC industry that has grown sleepy in that company's absence.

And for that, you should drop Jobs an E-mail and say thanks.□

Editor in chief at Computerworld *from 1986 to 1996, Laberis is now president of Bill Laberis Associates, a consulting and publishing company in Holliston, Mass. His Internet address is bill@laberis.com.*

Bundling PCs and 'net providers a fad

David Moschella

PCs aren't cell phones, and recent efforts by Compaq, IBM, Hewlett-Packard, Gateway and Packard Bell to link their PC sales to specific Internet service providers and Web sites will likely prove a passing fad.

In the end, those schemes do more for vendors than for customers.

At first glance, it might seem to make sense that, just as cellular telephony and cable TV are marketed as bundled hardware/service offerings, PCs should come with Internet access included. Unfortunately, there are at least three reasons that this concept should prove more flawed than forceful.

1. With cable TV, there's usually only one local service provider. Therefore, because there's no real consumer choice anyway, getting products and services bundled together makes perfect sense. Even with cell phones, the number of major service providers often is quite limited. In contrast, consumers still have a real choice as to whom their Internet provider will be. Perhaps more important, Internet providers come and go; the ones selected as preferred choices today might well be gone, renamed, merged or just plain embarrassing three years from now.

2. Bundling cell phones with wireless service makes sense because the two businesses essentially were launched together and have no real value apart from one another. That isn't the case with PCs, which were in wide use well before the Internet became a mass-market phenomenon. Because Internet service isn't an inseparable part of the PC sale, the two markets will almost surely evolve independently.

3. With cell phones and cable TV, it's the cheaper hardware product that gets bundled with the more expensive service offering. With PCs, it's the other way around. Even with today's falling PC prices, PC hardware still costs considerably more than Internet access. Therefore, perhaps it's the access that should be bundled, not the hardware. Maybe consumers would pay $300 more for a PC if it came with three years of free Internet access. More broadly, current efforts by Compaq and others to use dedicated keys to direct customers to specific Web services run counter to both today's diverse consumer needs and the PC's inherent programmability. Just as cell phone makers would never market a phone with a dedicated button to call "mom," and no cable TV company would market a remote control with a separate button for ESPN, there's no need to assign a key to any specific content or service. Just as we customize telephone speed dials, we will want to create our own Internet shortcuts. Fortunately, given that most standard PC keys now are pretty much useless, the potential for those customized keys is significant. When was the last time you used "print screen," "scroll lock," "pause" or indeed most of the F1 through F12 keys? On the other hand, how many of us really use all of the speed-dial features of today's modern phones?

Computers aren't cell phones; what works in one market is pointless in another.

Perhaps what's most unsettling about all of this is the implicit disregard for the customer. Whichever Internet provider comes up with the most cash will likely become the default PC option. PC companies can mask their real motive by saying they're trying only to simplify operation for the customer. That won't fool anyone. Everyone can see that their screens and keyboards now are for sale.□

Moschella is an author, independent consultant and weekly columnist for Computerworld. *His Internet address is dmoschella@earthlink.net.*

Corporate Strategies

Case Studies • Trends • Outsourcing

Briefs

Warning to job-hoppers

Too many job moves may backfire. A recent survey suggests that five job changes in 10 years makes an employee look like a job-hopper, which employers hesitate to hire.

Base: Survey of 1,400 CIOs

Source: RHI Consulting, Inc., Menlo Park, Calif.

Circle K adds workflow

Circle K Stores recently signed a $1.5 million licensing agreement for an enterprise workflow system based on JetForm Corp.'s InTempo software. The company will deploy the software in its 2,600 convenience stores nationwide. The InTempo software will be integrated with PeopleSoft, Inc. applications to automate human resources processes such as pay changes, W-2 forms and employee benefits.

High-tech hopes

The city of Duluth, Minn., has begun work on [illegible] Duluth Technology [illegible] a $[illegible] million cluster [illegible] buildings it hopes will [illegible] high-tech companies to its northeastern corner of the state. As part of the plan, the city has struck a franchise-like deal with Ronneby, Sweden-based Soft Center International, which has set up a similar site there. Soft Center Duluth will specialize in matching up overseas companies looking to enter the U.S. market with students seeking jobs. There are plenty of students nearby; Duluth is home to a 7,000-student campus of [illegible] of Minnesota, city officials said.

STAY-AT-HOMES

By 2002, more than 108 million employees worldwide will work regularly outside the traditional office.

Source: Gartner Group, Inc., Stamford, Conn.

Database minds the stores

▸ *Pizza Hut uses app to track franchise quality*

By April Jacobs

WHEN DALLAS-BASED Pizza Hut, Inc. wanted to improve customer satisfaction and operations, it revamped its methods for evaluating 5,400 franchise restaurants, turning away from a subjective paper form to a FileMaker, Inc. database application.

The application allows the company to track franchisees to help protect the integrity of its brand and improve customer satisfaction.

The application lets 35 Pizza Hut operations specialists gather consistent reports as they regularly visit the company's franchise restaurants and consult with franchise owners.

Using more than 300 criteria, the consultants are able to grade everything from quality of service and food to staff deployment and building appearance. The whole process was designed to identify any problems a franchisee might be having that could affect profits and to solve them as quickly as possible, said Jim Richardson, director of franchise operations support at Pizza Hut.

A BETTER WAY

About 5,400 of the 8,400 or so Pizza Hut restaurants belong to independent operators, who must maintain standards set by Pizza Hut, Inc. in order to keep the franchise. Pizza Hut and the franchisees jointly set up the system to replace a self-reporting procedure that was spotty and inefficient.

"This was done before on paper forms by their own management. And rather than 35 people, there were 350 people looking at things 350 different ways with no action plans," Richardson said.

Now, each evaluation ends with an action plan if there are any issues, and feedback is constantly rolled back to headquarters. Franchisees also evaluate the evaluation itself to constantly improve it.

Pizza Hut, Inc.:

- **8,537 locations nationwide**
- **Annual revenue of almost $5 billion**
- **Plans to add 400 locations each year**
- **Uses 2.5% of all the milk (more than 3.2 billion pounds) produced in the U.S. yearly for its cheese**

Source: Pizza Hut, Inc., Dallas

"When you need to solve a problem, the first thing you have to do is agree there is a problem and then decide what you are going to do about it. This kick-starts the whole process," Richardson added.

Terry Grove, performance manager at Pizza Hut, said the system took about six weeks to develop and deploy, beginning in February with a $40,000 investment. "If we can increase sales by 1%, we'd have a 10,000% return on investment," Grove said.

Evaluation specialists carry laptops loaded with the cus-

Database, page 32

Each new Nautica design used to come with 20 pages of detail

Retail extranet makes copy chores passe

By Sharon Gaudin

NAUTICA APPAREL, INC. is using an extranet to dig itself out from under a mountain of paperwork.

The retail company, which focuses on men's sportswear, found it was spending a huge chunk of its time and money making photocopies instead of making clothing or money. And now, nearly a year after installing an extranet to replace an outdated communication system, the paperwork is gone, communication is better, and the project has already more than paid for itself.

"There are a lot of companies trying to eliminate the paper and mail trail," said Karen Boucher, an analyst at The Standish Group International, Inc. in Dennis, Mass.

Retail extranet, page 32

Sysco delivers with 'smart' system

▸ *App overhaul brings uniformity*

By David Orenstein

HOUSTON-BASED food distributor Sysco Corp. has a secure $15.3 billion presence in the market. But because its scores of local, autonomous branches have unique systems configurations, the company has had to work extra hard to treat national customers with the consistency they expect.

"It cost us a lot of time and money in order to provide that service," said Larry Pulliam, vice president of information services and chief information officer at Sysco.

Enter the Sysco Uniform System (SUS), a comprehensive replacement and standardization of virtually all of the company's enterprisewide applications. Sysco is about two-thirds of the way through deployment of the applications, which will improve everything from demand forecasting to warehouse management.

"It's going well — not that we haven't had our moments," Pulliam said. "We want to take advantage of new technologies . . . to have more information, more accurate information and to have it quicker."

The SUS involves millions of lines of internally generated code in a variety of languages and was designed to serve roughly 30,000 Sysco users and tens of thousands of customers with a World Wide Web- and desktop-based ordering system.

Sysco's systems overhaul called for modernizing about 70 warehouses

Alice Greene, an analyst at Industry Directions, a Boston-based distribution consulting firm, said most companies don't tackle all their systems at

Sysco, page 32

Corporate Strategies

Case Studies • Trends • Outsourcing

Briefs

Warning to job-hoppers

Too many job moves may backfire. A recent survey suggests that five job changes in 10 years makes an employee look like a job-hopper, which employers hesitate to hire.

Base: Survey of 1,400 CIOs

Source: RHI Consulting, Inc., Menlo Park, Calif.

Circle K adds workflow

Circle K Stores recently signed a $1.5 million licensing agreement for an enterprise workflow system based on JetForm Corp.'s InTempo software. The company will deploy the software in its 2,600 convenience stores nationwide. The InTempo software will be integrated with PeopleSoft, Inc. applications to automate human resources processes such as pay changes, W-2 forms and employee benefits.

High-tech hopes

The city of Duluth, Minn., has begun work on the Duluth Technology Village, a $30 million cluster of office buildings it hopes will attract high-tech companies to its northeastern corner of the state. As part of the plan, the city has struck a franchise-like deal with Ronneby, Sweden-based Soft Center International, which has set up a similar site there. Soft Center Duluth will specialize in matching up overseas companies looking to enter the U.S. market with students seeking jobs. There are plenty of students nearby; Duluth is home to a 7,441-student campus of the University of Minnesota, city officials said.

STAY-AT-HOMES

By 2002, more than 108 million employees worldwide will work regularly outside the traditional office.

Source: Gartner Group, Inc., Stamford, Conn.

Database minds the stores

▸ Pizza Hut uses app to track franchise quality

By April Jacobs

WHEN DALLAS-BASED Pizza Hut, Inc. wanted to improve customer satisfaction and operations, it revamped its methods for evaluating 5,400 franchise restaurants, turning away from a subjective paper form to a FileMaker, Inc. database application.

The application allows the company to track franchisees to help protect the integrity of its brand and improve customer satisfaction.

The application lets 35 Pizza Hut operations specialists gather consistent reports as they regularly visit the company's franchise restaurants and consult with franchise owners.

Using more than 300 criteria, the consultants are able to grade everything from quality of service and food to staff deployment and building appearance. The whole process was designed to identify any problems a franchisee might be having that could affect profits and to solve them as quickly as possible, said Jim Richardson, director of fraochise operations support at Pizza Hut.

A BETTER WAY

About 5,400 of the 8,400 or so Pizza Hut restaurants belong to independent operators, who must maintain standards set by Pizza Hut Inc. in order to keep the franchise. Pizza Hut and the franchisees jointly set up the system to replace a self-reporting procedure that was spotty and inefficient.

"This was done before on paper forms by their own management. And rather than 35 people, there were 350 people looking at things 350 different ways with no action plans," Richardson said.

Now each evaluation ends with an action plan if there are any issues, and feedback is constantly rolled back to headquarters. Franchisees also evaluate the evaluation itself to constantly improve it.

"When you need to solve a problem, the first thing you have to do is agree there is a problem and then decide what you are going to do about it. This kick-starts the whole process," Richardson added.

Terry Grove, performance manager at Pizza Hut, said the system took about six weeks to develop and deploy, beginning in February with a $40,000 investment. "If we can increase sales by 1%, we'd have a 10,000% return on investment," Grove said.

Evaluation specialists carry laptops loaded with the cus-

Database, page 32

Pizza Hut, Inc.:

- **▸ 8,537 locations nationwide**
- **▸ Annual revenue of almost $5 billion**
- **▸ Plans to add 400 locations each year**
- **▸ Uses 2.5% of all the milk (more than 3.2 billion pounds) produced in the U.S. yearly for its cheese**

Source: Pizza Hut, Inc., Dallas

"We are able to produce nightly reports to customized recipients."

Jim Richardson, Pizza Hut

Each new Nautica design used to come with 20 pages of detail

Retail extranet makes copy chores passe

By Sharon Gaudin

NAUTICA APPAREL, INC. IS using an extranet to dig itself out from under a mountain of paperwork.

The retail company, which focuses on men's sportswear, found it was spending a huge chunk of its time and money making photocopies instead of making clothing or money. And now, nearly a year after installing an extranet to replace an outdated communication system, the paperwork is gone, communication is better, and the project has already more than paid for itself.

"There are a lot of companies trying to eliminate the paper and mail trail," said Karen Boucher, an analyst at The Standish Group International, Inc. in Dennis, Mass.

Retail extranet, page 32

Sysco delivers with 'smart' system

▸ App overhaul brings uniformity

By David Orenstein

HOUSTON-BASED food distributor Sysco Corp. has a secure $15.3 billion presence in the market. But because its scores of local, autonomous branches have unique systems configurations, the company has had to work extra hard to treat national customers with the consistency they expect.

"It cost us a lot of time and money in order to provide that service," said Larry Pulham, vice president of information services and chief information officer at Sysco.

Enter the Sysco Uniform System (SUS), a comprehensive replacement and standardization of virtually all of the company's enterprisewide applications. Sysco is about two-thirds of the way through deployment of the applications, which will improve everything from demand forecasting to warehouse management.

"It's going well — not that we haven't had our moments," Pulham said. "We want to take advantage of new technologies . . . to have more information, more accurate information and to have it quicker."

The SUS involves millions of lines of internally generated code in a variety of languages and was designed to serve roughly 30,000 Sysco users and tens of thousands of customers with a World Wide Web- and desktop-based ordering system.

Alice Greene, an analyst at Industry Directions, a Boston-based distribution consulting firm, said most companies don't tackle all their systems at

Sysco, page 32

Sysco's systems overhaul called for modernizing about 70 warehouses

NT picked for stock analysis app

By Marc Ferranti
NEW YORK

NASDAQ STOCK MARKET has chosen Microsoft Corp.'s Windows NT Server operating system to update its MarketWatch trading analysis application. Microsoft hopes the move will help show off the operating system's capabilities for mission-critical systems.

But the implementation won't be completed until the end of 2000, and some industry observers are skeptical about Nasdaq's plans for the system.

The Nasdaq MarketWatch installation will be used by only 25 users initially, but eventually it will need to analyze more than 1,000 transactions per second — a goal beyond the number-crunching abilities of current commercial NT applications, according to both Nasdaq and Microsoft officials.

FAST TRACK

MarketWatch analyzes trades that happen within a day, not weekly or monthly activity. It must complete its analysis of each trade within 90 seconds, according to market officials.

"MarketWatch is a kind of sanity check, alerting us when a trade just doesn't make sense," said Gregor Bailer, Nasdaq executive vice president and chief information officer. It also helps ensure that companies follow rules such as complying with a trading suspension, he said.

MarketWatch doesn't handle transaction processing and stock prices for the Nasdaq exchange itself, Bailer noted. That chore is handled by a Unisys Corp. 4800 mainframe system and servers from the Tandem Computers, Inc. unit of Compaq Computer Corp.

While Nasdaq's trading software infrastructure won't run on NT, MarketWatch must "shadow" the exchange, keeping up with it as it performs surveillance duties, Bailer noted. "It's a kind of proof of concept for NT's ability to keep pace in a high-volume, mission-critical environment," he said. Analysts were skeptical, however, that the system proved NT's worth in mission-critical applications. "I say, 'Show me,'" said Dan Kusnetzky, an analyst at International Data Corp. in Framingham, Mass.

"This may not be the actual Nasdaq exchange running on NT, but it's still about money, and I just don't see this type of thing working on NT 4.0 and current Microsoft clustering software," Kusnetzky said. □

Ferranti writes for the IDG News Service.

Sysco

CONTINUED FROM PAGE 31

once because they lack the resources. "Very few are in a position to overhaul," she said.

Sysco's operation was no light undertaking. The company reorganized its information systems team. Five new senior directors were named to oversee implementation and support in various regions. The company also gathered the most skilled members of its applications development department to oversee design, enhancements and technical support for the applications.

Pulliam declined to specify how much Sysco has spent on the mammoth effort, which involves modernizing about 70 warehouses, as well as revamping the company's financial, merchandising, customer order and inventory systems.

Warehouses are now run by smart systems

Sysco's warehouses are now run by "smart" systems linked to radio frequency devices on the forklifts that route products to the optimal location based on pallet size and the food storage requirements, Pulliam said.

Management and analysts who pore through sales and order data will have new homegrown tools to drill further down into the information. Merchandisers will receive better buying recommendations from computers with souped-up forecasting capabilities.

Meanwhile, the online ordering system will give multiregional customers a standardized interface with Sysco based on electronic data interchange (EDI). The system will provide customers with features to link their ordering to their inventory management, Pulliam said.

Pery Fri, director of the food distribution industry consortium Efficient Foodservice Response (EFR), said the industry needs sophisticated EDI systems to better forecast global demand and manage inventory. An EFR report last year said the industry could save $6.6 billion with wider adoption of EDI. More savings could accrue from the use of standard Universal Product Code [UPC] numbers. Pulliam said the SUS will let Sysco work more efficiently with the standard UPCs.

Although the industry is pushing for standards, and Sysco wants more uniformity internally, the SUS had to be customizable to preserve the autonomous culture of Sysco's regional operating companies, Pulliam said. "The needs of companies working in Albany [N.Y.] may be very different than the needs [of those] in Texas or California," he said.

However the SUS works internally, national Sysco customers such as catering giant Aramark Corp. simply want better service. "Service levels are naturally expected to improve as Sysco significantly upgrades its technology and capability to communicate electronically," said John Orobooo, vice president of purchasing at Aramark. □

Database minds the stores

CONTINUED FROM PAGE 31

tomized application to each location they visit. After completing an evaluation, they use a portable printer to give a copy of the evaluation and action plan to the appropriate person at the restaurant and E-mail a copy to headquarters, where it is reviewed. Depending on the score a restaurant receives, it is evaluated again within a period of 30 to 180 days.

NIGHTLY NEWS

"We are also able to produce nightly reports to customized recipients, and we produce analysis reports on a monthly and a quarterly basis," Richardson said.

Stephen Spence, an analyst at Southwest Securities, Inc. in Dallas, said restaurant franchise operations such as Pizza Hut face not only stiff competition with one another, but also the task of making sure that thousands of locations are up to par.

"One of the major issues is uniformity of quality, like making sure that the food you get in Texas is as good as what you get in New Jersey," he said.

Systems that ensure that food is not only uniform but also good mean better sales.

"It's not just uniformity; it's that it's uniformly good, because it can affect everything from sales to the cost of the food," Spence said. □

SHORT

Novell spends $10M on net firms

Figuring that it's more likely to get software companies to develop applications for its operating system if it owns a piece of them, Novell, Inc. recently invested $10 million in four networking companies.

The money for those initial investments came from the Novell Internet Equity Fund, a 6-month-old investment group Novell uses to fund companies developing software for NetWare 5.0 and Novell Directory Services.

The companies are Evergreen Internet, Inc. in Chandler, Ariz., which makes Java-based electronic-commerce software; GlobalCast Communications, Inc. in Fremont, Calif., which makes multicast networking software that allows Internet data broadcasting; NetPro Computing Corp. in Scottsdale, Ariz., which provides directory services management software; and NetVision, Inc., an Orem, Utah-based firm that sells a directory services integration package.

Novell officials estimate there are 300-plus third-party applications available for NetWare 4.x and the forthcoming 5.0 release. — Laura DiDio

Retail extranet makes copy chores passe

CONTINUED FROM PAGE 31

Nautica has 200 freestanding stores worldwide, along with a presence in department and specialty stores. In the past, store managers were given about 20 pages worth of specs on each forthcoming design so they could choose which ones they wanted to sell.

That meant that all of the information — for each design — had to be color-copied and shipped off to regional offices, copied again and sent to international offices and then copied yet again and shipped to individual stores.

HANG TIME

"A lot of time was being spent standing behind a color copier for three hours or behind a fax machine," said Doug Colley, director of retail development at Nautica. "We estimated that we spent approximately 25% of our staff time on copying, collating and mailing. Each department had a piece of the copying pie."

"There was so much redundancy and rekeying and mistakes being made," said Jordan Harris, president and CEO of Hurricane Technology Partners, Inc., a consultancy in New York. Hurricane was hired to analyze Nautica's problem and then solve it with an extranet, to end the continued expenses of copies, Federal Express and overnight mail.

So Harris and his team used Microsoft Corp.'s BackOffice suite to build a private extranet that all of Nautica's member stores and licensees can access for data and to place orders.

Harris said they used Microsoft's SQL Server for Nautica's database, Windows NT for the servers, ActiveX controls to customize the interface and Active Server pages to display answers to queries.

Now the design data is put into the system once, and the managers and licensees can access it and make their orders instantly instead of waiting for up to two weeks for the information to arrive in their mailboxes.

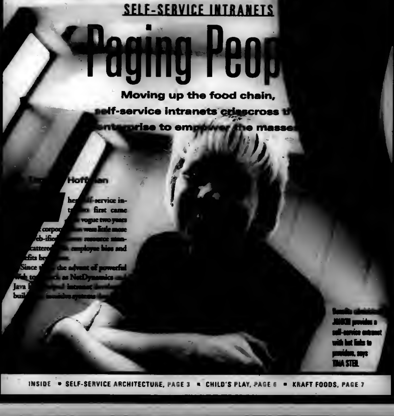
Harris said he could have done the job with other tools, but he wanted the one-stop shopping BackOffice offered.

"There's a lot of fear about going with a piecemeal situation," Harris said. "If Back Office puts all these pieces together, it just makes sense." □

FROM THE EDITORS OF
COMPUTERWORLD
VOLUME 3, NUMBER 8
AUGUST 24, 1998

Intranets

A MONTHLY LOOK AT WEB DEVELOPMENTS BEHIND THE FIREWALL



SELF-SERVICE INTRANETS

Paging Peop

Moving up the food chain, self-service intranets crisscross the enterprise to empower the masses

Hoffman

he lf-service in- t first came vogue two years k corpo were little more eb-ified resource man- cattered employee bios and efits br.

Since t the advent of powerful Web to ch as NetDynamics and Java intranet develo buil systems

Benefits administrator JONKER provides a self-service extranet with hot links to providers, says TINA STEIL

INSIDE ▪ SELF-SERVICE ARCHITECTURE, PAGE 3 ▪ CHILD'S PLAY, PAGE 6 ▪ KRAFT FOODS, PAGE 7

FROM THE EDITORS OF
COMPUTERWORLD
VOLUME 3, NUMBER 8
AUGUST 24, 1998

Intranets

A MONTHLY LOOK AT WEB DEVELOPMENTS BEHIND THE FIREWALL

SELF-SERVICE INTRANETS

Paging Peop

Moving up the food chain, self-service intranets crisscross th enterprise to empower the masse

By Tho Hoffman

W hen elf-service in- first came vogue two years were little more eb-ifie resource man- employee bios and efits b

Since , the advent of powerful Web t as NetDynamics Java helped intranet build , intuitive systems

Benefits administrator J&HKH provides a self-service extranet with hot links to providers, says TINA STEIL

INSIDE ■ SELF-SERVICE ARCHITECTURE, PAGE ■ CHILD'S PLAY, PAGE ■ KRAFT FOODS, PAGE

SELF-SERVICE INTRANETS

Continued from page 1

employees to enroll in 401(K) plans, select primary-care physicians online, and be the type of self-sufficient worker bees of which HR professionals dream.

Most projects are being driven by HR organizations seeking to empower employees with benefits information and free HR staffs from mundane data entry and help desk-type chores. And many organizations have opted to buy packaged self-service applications as programmer resources at customer companies are tight and vendors have done an adequate job keeping up with users' demands.

Self-service intranets "are really the best way to leverage a company's investment in technology," says Elaine Davis, director of human resources services at Glaxo Wellcome, Inc., a Research Triangle Park, N.C.-based pharmaceutical company that's been developing managerial and employee self-service systems using NetDynamics since 1995.

Fortune 500 companies like Glaxo Wellcome are spending big bucks on enterprise resource planning (ERP) systems from PeopleSoft, Inc. and SAP America, Inc. The problem with those investments, says Davis, is that "the only people who get to use those systems are in HR, payroll and benefits."

SELF-SERVICE INTRANETS **"are really the best way to leverage a company's investment in technology."**

ELAINE DAVIS, GLAXO WELLCOME

Spending a few hundred thousand dollars more to develop an integrated self-service intranet, as Glaxo Wellcome did to create a Web-based compensation system for 1,500 managers, "allows you to deploy that information across an organization," says Davis.

Jeff Woodrum, director of corporate payments at Glaxo Wellcome, uses the compensation system to set up employee stock option awards after annual performance reviews. "Compared to the way we used ro do things in a quasi-paper environment, this system is very easy to use," Woodrum says.

PEOPLE PAYBACK

Glaxo's Davis says she doesn't have any hard figures on productivity gains or cost savings. But Fujitsu America, Inc. expects a four-year return on its $200,000 investment in self-service HR systems by slashing its printing and distribution costs on open enrollment forms for 3,000 employees, says Darrell Moore, director of compensation and benefits for the San Jose, Calif.-based computer vendor.

Those savings will stem, in part, from Fujitsu's future use of an electronic pay stub module from the HRConnect software suite it purchased from Norcross, Ga.-based Conduit Software. Fujitsu will be able to send electronic pay stubs to employees whose paychecks are direct-deposited.

Not that cost savings are restricted to HR self-service systems. An intranet-based corporate aviation system used by Dow Chemical Corp., which allows employees to book flights on the company's private jets, has slashed from 20 minutes to one minute the amount of time it takes to make a reservation, says Bob Graham, a technical leader for Dow in Plaquemine, La.

And NationsBanc Montgomery Securities, Inc.'s use of an expense report system from Emeryville, Calif.-based Extensity, Inc. should reduce the cost of processing expense reports by 50% by streamlining the number of touch points, says Tony Avila, chief administrative officer at the San Francisco-based investment bank.

Indeed, reducing administrative costs was one of the top three goals cited by 52 HR and IS professionals surveyed in a recent HR self-service study conducted by Forrester Research, Inc. in Cambridge, Mass. The other top two goals of such projects — increasing service levels and freeing HR resources for strategic work.

End-user acceptance of self-service systems is pretty high at most companies. Use of the managerial compensation system at Glaxo Wellcome rose from 98% in the first year to 100% in the second year. "It helps not to offer any alternatives," Davis says.

Most users seem to be leaning toward buying off-the-shelf applications rather than building these systems themselves. That's being driven partly by the lack of experienced HTML, Java and other hot programmers, and partly by staff constraints from Year 2000 and other IT projects.

That was one of the main reasons why Equifax, Inc. opted for Geac SmartStream's Cyberstream Employee software. "We figured it was a better investment to allow them to build it," says

Mary Delashmit, vice president of HRIS at the Atlanta-based consumer credit agency. In-house development costs would have run close to its investment in the Geac software, she says, but future enhancements would have made it too expensive to build internally.

Instead, Geac will upgrade the software under its maintenance agreement, says Delashmit, who put the software and re-engineering costs in the seven-figure range. Equifax employees will be able to use a Domino Lotus Notes knowledge database to get answers to questions such as "How do I check on a healthcare claim?" says Delashmit.

Lack of skilled software programmers is what drove Carolina Power & Light to hire systems integrator NexGen SI, Inc. to build an employee self-service HR system, says John Gray, supervisor of HRIS for the Raleigh, N.C.-based utility.

NexGen developed a Web interface to CP&L's PeopleSoft HR system which enables employees to check how much vacation time they've got coming and to change biographical information.

Other customers who outsource benefits administration are piggybacking those services with extranet self-service applications from their service providers. BellSouth Telecommunications, Inc., for example, was allowing both active and retired employees to use an integrated voice response system to enroll in benefits from administrator J&HKBI, Inc. before the Des Moines, Iowa-based benefits provider began adding extranet capabilities last fall.

One of the more popular features of the employee self-service benefits extranet system allows BellSouth employees to link to other sites, such as MetLife, the telco's 401(K) administrator, says Ann DeBellis, manager of benefits communications at BellSouth in Birmingham, Ala. Using its T-1 connection into J&HKBI, Iowa BellSouth employees can point their Web browsers from the J&HKBI site to a hot link to MetLife, says DeBellis.

For its part, J&HKBI chose Java as its employee self-service development environment and HAHTsite, a Web development environment from Raleigh, N.C.-based HAHT Software, Inc., to provide database access to BellSouth's benefits vendors such as Fidelity Investments in Boston, says Tina Steil, assistant vice president of J&HKBI's advanced technologies group.

For example, Steil says she recently began looking at Ardsley, N.Y.-based Interactive Corporate Communications, Inc.'s Click HR 3.0 system, which uses a Java-based engine to generate pages for open enrollment and other applications.

"We're always looking to purchase [applications] and plug-in with existing technologies," says Steil. "I'm not into building from scratch."

A MANY-VENDORED THING

Customers are keeping vendors like Edify Corp. and Seeker Software, Inc. busy with demands for new features. Recent

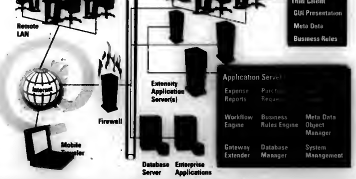
WHAT'S ONLINE

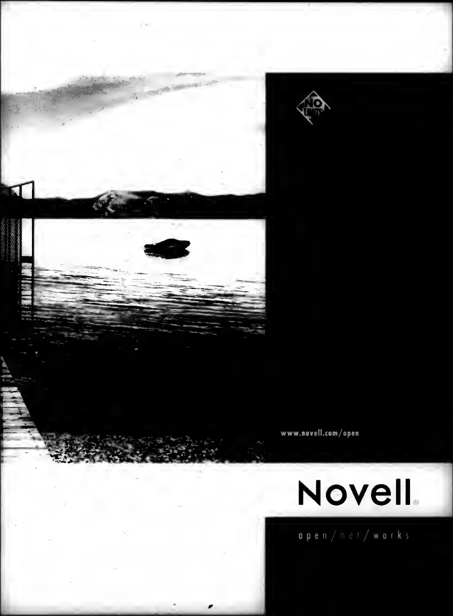
Learn more about the future of self-service intranets, visit Intranets online at

www.computerworld.com/intranets

SELF-SERVICE INTRANET ARCHITECTURE

How a self-service intranet expense report application works




NO LIMITS
www.novell.com/open
Novell
open/net/works

Continued from page 3

enhancements to Edify's V2.5 employee self-service system include a module for new hire and open enrollment, as well as an integration module for PeopleSoft's 7.0 HRMS system. Customers can modify Edify systems using a scripting language from the vendor "that's pretty easy to learn," says Jim Holincheck, an analyst at Giga Information Group in Cambridge, Mass.

Other Web-based systems, such as Conduit Software's HRConnect, can be modified using a variety of Web-based tools, he says.

ERP vendors such as PeopleSoft and SAP have recently begun adding self-service intranet modules to their software suites. But the features, such as updating W-4 forms for payroll, are pretty limited so far, Holincheck says.

Although PeopleSoft and SAP are expected to continue to add self-service functionality to their software suites, "they're not going to focus too much on this niche" at the expense of enhancing their core products, says Sue Obijiski, an analyst at Gartner Group, Inc. in Stamford, Conn.

Now that they have a little experience under their belts, users are asking vendors to expand beyond traditional employee self-service HR systems into managerial and other cross-functional systems, such as travel and expense and time and attendance.

Looking ahead, users and analysts both see a trend toward self-service intranets spanning a variety of corporate needs, from today's HR systems to travel and expense, procurement and other administrative tasks over the next year or so.

Beyond that, expect to see more packaged applications targeted at specific organizational roles, such as chief financial officers, says Giga's Holincheck. "These systems need to be optimized to empower key individuals within an organization to be more effective," he adds.

Hoffman is a *Computerworld* senior editor, IS management.

Child's Play

Mike Cochran has been very happy with the at-home day care provider who's been watching his two-and-a-half-year-old son, Logan, since his wife Nancy went back to work in 1996.

But Logan's sitter Sue is expecting a baby at year-end, and even though she insists she'll continue to watch Logan, Cochran is keeping his options open by comparing childcare services through a Web-based extranet service.

LIFECARE NET "separates itself from competitors through its availability and depth."

MIKE COCHRAN, MICROSOFT

Cochran, a benefits manager at Microsoft Corp. in Redmond, Wash., has been using a system from DCC, Inc., a benefits services company, called LifeCare Net since March. The system allows employees of DCC customers such as Colgate-Palmolive Co. in New York and Wells Fargo Bank in San Francisco to compare services from a database of 5 million child- and elder-care providers.

Westport, Conn.-based DCC launched LifeCare Net two years ago and has been "constantly" updating it, says Cochran. For example, once DCC develops a profile on each user — replete with biographical information and interests (for example, daughter of an Alzheimer's patient) — pages are customized for users each time they log on, says Mark Willaman, director of marketing and sales at DCC.

"If you're caring for an Alzheimer's patient and the Federal Drug Administration approves a new treatment, that news will be posted to your welcome screen," says Willaman.

Users can also use an online library of educational resources on topics ranging from prenatal care to saving for retirement.

Beyond that, DCC has customized the system to integrate information about benefits at each of its customer companies. So if an employee at Colgate-Palmolive reads an article on LifeCare Net about childcare, there will be an accompanying window describing Colgate-Palmolive's childcare benefits.

DCC can recognize a user company by its IP address or user domain name. After recognizing the company, the system uses an Oracle relational database to search for the information requested by the user. In addition, it uses an Oracle procedural language called PL/SQL, which takes the piece of content that the system should be displaying, plucks it out of the Oracle database and displays it to the user, says Christine Hefele, director of systems development at DCC.

DCC has other features in the pipeline, such as building a videoconferencing connection between viewers and a nutritionist who answers questions in one of LifeCare Net's chat rooms. Willaman says DCC hopes to add the videoconferencing capabilities next year.

Those types of robust features, combined with an attractive selling price (less than $5 per employee per year — DCC's telephonic services are priced at $10-to-$15 per employee per year) keeps Cochran a happy user. "It's really easy to use," says Cochran. LifeCare Net "separates itself from competitors through its availability and depth," he adds.

-THOMAS HOFFMAN

PROJECT: KRAFT FOODS, INC.

It's Serve Yourself at Kraft's Intranet Cafe

By Steve Alexander

More than a year after its modest beginning, the self-service intranet at Kraft Foods, Inc. in Northfield, Ill., has been expanded to encompass finance, sales and second-generation human resources applications. The purpose of the intranet — dubbed the Kraft Intranet Cafe — is to eliminate paper documents where possible while smoothing business processes. Explaining the plan are John Helmerci, director of finance and human resource systems; Mark Froseth, director of customer service systems; and Stephen Finnerty, chief technology officer.

WHAT THEY'RE DOING

Helmerci: What we call HR Online went live early in 1997. We started with about 5,000 salaried employees. Today there are 12,000 users, and we intend to extend the intranet to all 38,000 Kraft employees.

Initially we offered mostly benefits data and static information on career development. We've been adding functions such as a health provider network, a retirement planner and job postings. You also can register for training courses or reserve a conference room online.

Froseth: We make daily sales information available to about 1,000 field salespeople. Our first focus was reporting transactions; we're now rolling out the sales report.

WHY THEY'RE DOING IT

Helmerci: The universal theme is not just to eliminate paper but to improve overall business processes. If you put something on the intranet, you key in only the fields that are needed and the drop-down menus help make it more accurate.

BENEFITS

Froseth: Before we had the intranet we were sending the same information over the phone lines to local laptops, and we incurred a lot of transmission costs. Now we hit the right people with information and the savings are huge.

Helmerci: On any given day, a little over 30% of the 12,000 people who have intranet access are using it. We're getting about 140,000 hits per month on our Intranet Cafe home page..

HOW THEY'RE DOING IT

Helmerci: General information about Kraft sales, finance and operations is accessible by all salaried employees with their logon ID and password. For more secure or confidential information, a second level of access is required. For example, if you want to go to HR pages, you need your social security number to get in plus a PIN to get personal information.

TECHNICAL CHALLENGES

Finnerty: You have to ask yourself, "Do I have the capacity to scale this to 40,000 employees, or even go beyond the walls of Kraft to our customers and suppliers and do this on a global basis?" Scaling represents a whole realm of other challenges.

WHAT'S ONLINE

For an expanded view of this project with RealAudio clips, point your browser to www.computerworld.com/intranets

TOOLS

Helmerci: Nearly all the intranet applications were developed internally. But the conference room scheduling software came from Amplitude Software Corp. in San Francisco. The HR applications were built with Edify Corp. tool sets. Microsoft FrontPage was used to create the sales pages. (HR data is served to the intranet from a mainframe.)

RETURN ON INVESTMENT

Helmerci: We're not quoting any cost numbers. But we know that by not having to publish a lot of documents we've saved money.

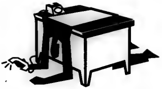
ADVICE TO OTHERS

Helmerci: Develop a self-service intranet using a one-company approach rather than making it specific to a division or a department. What made Kraft Intranet Cafe a success was that it has a common look and feel.

Alexander is a freelance writer based in Edina, Minn.

COMPUTERWORLD INTRANETS *is published monthly on the fourth Monday of the month as a supplement to Computerworld. Project Editor: Amy Malloy; Art Director: Mary Beth Welch; Copy Editor: Catherine McCrorey; Computerworld Magazines Editor: Alan Alper. Phone: (800) 343-6474; E-mail: alan_alper@cw.com.*

PHOTOGRAPH BY JEFF SCIORTINO



Internet Commerce

Extranets • The World Wide Web • Intranets

Briefs

Maximum price consumers are willing to pay for an online purchase

ess than $25	27%
25 to $50	17%
51 to $99	7%
100 to $499	10%
500 to $1,000	2%
ore than $1,000	5%
ther/don't know	32%

[illegible]: Survey of 1,001 adults

[illegible] Media LLC [illegible] York

[illegible]

[illegible] is [illegible] ser-vice [illegible] customized [illegible] a col-lection of [illegible] ad-dress [illegible] [illegible] native [illegible] the communities, [illegible] are free, [illegible] open to the public [illegible] membership only. A beta version of the program is up at [illegible]; a wider rollout is slated for the fall.

Ticketmaster [illegible]

Ticketmaster Group, Inc. in Los Angeles is merging its Ticketmaster Online World Wide Web site with CitySearch, a regional Web city guide based in Pasadena, Calif. The new venture, Ticketmaster Online/CitySearch, plans to retain two separate presences on the Web but let consumers easily learn about events and then buy tickets.

Citibank, Netscape [illegible]

Citibank has struck a deal to become the anchor tenant on the Personal Finance Channel of Netscape Communications Corp.'s Netcenter Web site, the companies announced last week. Terms of the deal weren't disclosed. Citibank customers eventually will gain another way to access the company's financial information and services via the Internet — other than the company's Web site and through America Online, Inc.

Retail exec not sold on Web

▸ *Dayton's Storch calls Internet sales inefficient*

By Sharon Machlis

ELECTRONIC COMMERCE

DAYTON HUDSON CORP. executive Jerry Storch says he's been called "some kind of Luddite" more than once. And a Chicago-area retail catalog consultant says Storch is "behind the times." Why? The 41-year-old president of credit and new businesses at the $28 billion retailer thinks the Internet isn't a great medium for selling consumer goods.

"It's not right for all forms of commerce," Storch said in a recent interview.

Although the Internet is excellent for delivering information and digital goods, he maintained, the cost of shipping one or two physical items to someone's home — even if the customer pays the freight charges — is more than what companies can save from Internet efficiencies and pass along to consumers.

"The only thing I could see that would change what I'm talking about is a transporter," Storch said, referring to the *Star Trek* gadget that "beams" people from one place to another. "People are not thinking clearly when it comes to actually physically distributing merchandise." Critics, though, say that argument implies mail order isn't a viable business either (see related story, page 34), which isn't the case.

But what really caught the industry's attention was a speech Storch made at a June retail conference. He warned manufacturers about trying to sell merchandise directly to consumers, bypassing retailers. (Dayton Hudson, based in Minneapolis, operates several chains, including the discounter Target and the upscale Marshall Field & Co.)

"The reality of the Internet to-

Retail exec, page 34

"People are not thinking clearly when it comes to actually physically distributing merchandise."

Dayton Hudson's Jerry [illegible]

"We're going to control our own destiny, and we can move a lot quicker"
— Glenn Hellyer, Hilton Hotels

Hilton saves by building app in-house with Java

By Carol Sliwa

WITH NO MORE than a dozen programmers, Hilton Hotels Corp. typically outsources its application development. But for a new browser-based Java application that the individual hotels will use to store a wide range of information, such as the number or types of rooms and restaurant hours, the chain decided to write and maintain the program in-house.

"In the past, we relied on vendors to figure things out for us. Now we're going to control our own destiny, and we can move a lot quicker," said Glenn Hellyer, director of corporate systems at Hilton.

Hellyer said he expects the decision to lead to cost savings of at least $500,000 over the next three years because of shorter development cycles and the switch to in-house programming. The company will save another $2,000 a month by not having to distribute and support its existing Hotel Information Database (HIDB) application.

Using a browser-based Java

Hilton, page 34

Netscape tool adds workflow to extranet

▸ *Web links partners outside the company*

By Carol Sliwa

NETSCAPE COMMUNICATIONS CORP. recently introduced a product — Process Manager 1.0 — designed to help companies create and manage workflow applications over extranets.

The Process Manager product, scheduled for a fall release, includes visually oriented tools and components to help developers build browser-based forms and set up a workflow sequence. They can drag and drop blocks of prebuilt code and point and click to define rules of the business process that are being automated.

Although Netscape has sought to make the process as easy as possible, developers probably will have to create ad-

Netscape, page 34

Netscape Process Manager includes the following components:

Builder: Lets developers create an application by dragging and dropping reusable blocks of code onto a whiteboard-type screen

Engine: Deploys the application, running on Netscape's Enterprise Web server and using the Directory Server to store information

Administrator: Lets managers track the status of the workflow process

Express: Web-based interface that the user sees

Internet Commerce

Extranets • The World Wide Web • Intranets

Briefs

Maximum price consumers are willing to pay for an online purchase

ess than $25	27%
$25 to $50	17%
$51 to $99	7%
100 to $499	10%
$300 to $1,000	2%
ore than $1,000	5%
ther/don't know	32%

se: Survey of 1,001 adults

rce: FreeRide Media LLC (www.freeride.com), w York

Excite-ing communities

Excite, Inc. is launching a service to let consumers create customized Internet communities that will include a calendar of events, a group address book, discussion areas, live online chats and a notice area. Those who create the communities, which are free, can make the area open to the public or to members only. A beta version of the program is up at *www.excite.com/channel/chat*; a wider rollout is slated for the fall.

Ticketmaster news

Ticketmaster Group, Inc. in Los Angeles is merging its Ticketmaster Online World Wide Web site with CitySearch, a regional Web city guide based in Pasadena, Calif. The new venture, Ticketmaster Online/CitySearch, plans to retain two separate presences on the Web but let consumers easily learn about events and then buy tickets.

Citibank, Netscape team

Citibank has struck a deal to become the anchor tenant on the Personal Finance Channel of Netscape Communications Corp.'s Netcenter Web site, the companies announced last week. Terms of the deal weren't disclosed. Citibank customers essentially will gain another way to access the company's financial information and services via the Internet — other than the company's Web site and through America Online, Inc.

Retail exec not sold on Web

▸ *Dayton's Storch calls Internet sales inefficient*

By Sharon Machlis

ELECTRONIC COMMERCE

DAYTON HUDSON CORP. executive Jerry Storch says he's been called "some kind of Luddite" more than once. And a Chicago-area retail catalog consultant says Storch is "behind the times." Why? The 41-year-old president of credit and new businesses at the $28 billion retailer thinks the Internet isn't a great medium for selling consumer goods.

"It's not right for all forms of commerce," Storch said in a recent interview.

Although the Internet is excellent for delivering information and digital goods, he maintained, the cost of shipping one or two physical items to someone's home — even if the customer pays the freight charges — is more than what companies can save from Internet efficiencies and pass along to consumers.

"The only thing I could see that would change what I'm talking about is a transporter," Storch said, referring to the *Star Trek* gadget that "beams" people from one place to another. "People are not thinking clearly when it comes to actually physically distributing merchandise." Critics, though, say that argument implies mail order isn't a viable business either (see related story, page 34), which isn't the case.

But what really caught the industry's attention was a speech Storch made at a June retail conference. He warned manufacturers about trying to sell merchandise directly to consumers, bypassing retailers. (Dayton Hudson, based in Minneapolis, operates several chains, including the discounter Target and the upscale Marshall Field & Co.)

"The reality of the Internet to-

Retail exec, page 34

> **"People are not thinking clearly when it comes to actually physically distributing merchandise."**

Dayton Hudson's Jerry Storch is an E-commerce skeptic

"We're going to control our own destiny, and we can move a lot quicker."
– Glenn Hellyer
Hilton Hotels

Hilton saves by building app in-house with Java

By Carol Sliwa

WITH NO MORE than a dozen programmers, Hilton Hotels Corp. typically outsources its application development. But for a new browser-based Java application that the individual hotels will use to store a wide range of information, such as the number or types of rooms and restaurant hours, the chain decided to write and maintain the program in-house.

"In the past, we relied on vendors to figure things out for us. Now we're going to control our own destiny, and we can move a lot quicker," said Glenn Hellyer, director of corporate systems at Hilton.

Hellyer said he expects the decision to lead to cost savings of at least $500,000 over the next three years because of shorter development cycles and the switch to in-house programming. The company will save another $2,000 a month by not having to distribute and support its existing Hotel Information Database (HIDB) application.

Using a browser-based Java

Hilton, page 34

Netscape tool adds workflow to extranet

▸ *Web links partners outside the company*

By Carol Sliwa

NETSCAPE COMMUNICATIONS CORP. recently introduced a product — Process Manager 1.0 — designed to help companies create and manage workflow applications over extranets.

The Process Manager product, scheduled for a fall release, includes visually oriented tools and components to help developers build browser-based forms and set up a workflow sequence. They can drag and drop blocks of prebuilt code and point and click to define rules of the business process that are being automated.

Although Netscape has sought to make the process as easy as possible, developers probably will have to create ad-

Netscape, page 34

Netscape Process Manager includes the following components:

Builder: Lets developers create an application by dragging and dropping reusable blocks of code onto a whiteboard-type screen

Engine: Deploys the application, running on Netscape's Enterprise Web server and using the Directory Server to store information

Administrator: Lets managers track the status of the workflow process

Express: Web-based interface that the user sees

Retail exec

CONTINUED FROM PAGE 33

day is this: Sales are low, it's an inferior channel for most merchandise, and it can commoditize your brand," be said at the conference. "If there is a business opportunity for vendors and retailers on the Internet, let's work together to find it."

Storch is particularly irked by some forecasts that consumers could one day end up viewing goods at brick-and-mortar stores and then buying them directly from manufacturers online. "We are not going to be a showroom for goods being sold over the Internet," he said emphatically. "That's not a threat. . . . [But] do you think we're going to continue carrying goods that we don't sell?"

Retail catalog consultant Maxwell Sroge in Evanston, Ill., was quick to respond, recalling similar battles between retailers and manufacturers as the mail-order business evolved.

"I remember seeing a retailer jump up on the stage and physically assault a CBS executive when they were announcing their Columbia Record Club," he said in a statement after Storch's speech. "Today, book clubs and record clubs are an accepted way of life." Last year, the consumer catalog business hit $107.5 billion, a 12% increase over 1996, according to figures from Maxwell Sroge Co.

"He's a little behind the curve," Sroge said of Storch last week.

NO KILLER APP

"I have never bought the argument that we'll wake up [one day] and all be shopping on the Internet," said Scott Smith, a principal analyst at Current Analysis, Inc. in Sterling, Va. "I agree it's not going to be a [retail] industry killer."

The rebuttals are in

Is the Web going to be hamstrung as a consumer shopping medium by the high cost of shipping goods? So contends Dayton Hudson's Jerry Storch — but others disagree.

"What he's saying is absurd. If [that] is true, there would be no mail-order business in this country. . . . The Internet makes it a little easier to cut costs [vs.] traditional costs of mail order. I think the Internet has the potential of greater percentage of retail sales than catalogs."
— Phil Polishook, vice president of marketing at EToys, Inc. in Santa Monica, Calif.

"We think it's going to be a huge part of our future. . . . We are devoting a lot of resources into making sure we are positioned well for this market."
— Alan Amling, director of electronic commerce at United Parcel Service of America, Inc. in Atlanta

"I think the convenience factor counts for a lot. People don't want the hassle of going to the store. . . . And many of the wines we carry, [our customers] can't get at their local store. Price is certainly one component, but it's not the only component. You don't always buy at the absolutely cheapest place in the brick-and-mortar world."
— Cyndy Ainsworth, director of marketing at Virtual Vineyards, run by Net Contents, Inc. in Palo Alto, Calif., which is doubling year-over-year sales in 1998

"We've already tested it and felt it could work."
— A spokesman at Macys.com in San Francisco, which plans to unveil a major new electronic-commerce Web site this fall.

— Sharon Machlis

That's not to say that Storch doesn't plan on getting Dayton Hudson involved in electronic commerce (the Target site is expected to add some shopping later this year), just that it's going to be limited.

Storch is looking to select merchandise he feels reinforces "special things" about the company's stores and complements its brand, especially Target, the nation's third-largest discount chain. "Our belief is the Internet can reinforce what's going on in the store," he said. "We don't expect [consumers] to buy toothpaste and apparel on the Internet."

Storch dismisses Amazon.com, Inc. as doing only $300 million to $400 million in sales this year ("peanuts"), while still losing money.

"I don't think they're ever going to be in the black," he said. "They're selling a heavily discounted item with high distribution costs." (Many Wall Street investors disagree, having pushed Amazon.com stock to stratospheric levels in anticipation of future profits.)

By contrast, he is bullish on prospects for online banking and stock trading because the transactions are all electronic.

"By the way, I'm a very heavy Internet user," he said. "For information, it's fabulous."☐

Hilton saves by developing app in-house with Java

CONTINUED FROM PAGE 33

application. Hilton expects to be able to reduce maintenance and deployment costs as well as cut down on the trouble of distribution to hotels worldwide and wide-area network traffic.

The HIDB application contains pieces of information about each hotel, such as the number and type of rooms, facilities available, languages spoken in the lobby and rates. It generates reports used primarily by the sales, marketing and operations departments for strategic planning and decision-support purchasing.

The outgoing HIDB application used Microsoft Corp.'s Access 2.0 software for a front end and a Sybase, Inc. database on the back end. The company typically made changes once per month and paid one outside company to maintain and upgrade it as it added new information fields and changed stored procedures. It hired another outside company to distribute it, said Brad Hilton, grandson of hotel founder Conrad Hilton and Las Vegas-based manager of systems development.

The Hilton chain distributed the application via its WAN, and the 200 hotels using it often encountered problems with setup and connectivity, officials said. Every user hotel had to have a Sybase Open Database Connectivity driver and an individual connection to the database.

"That's a lot of overhead for the database to handle," Hilton said.

Now, users will access a World Wide Web server that does a password hookup to the database through a single database pooling connection.

Hilton Hotels started out with its usual approach for the new HIDB application, seeking an outside consulting firm to do the work. The consultant spent two months on a prototype.

In the meantime, Brad Hilton had started checking out Java tools. He had no Java experience, but after discovering Vision Software Tool, Inc.'s Jade tool, he built what he described as a "similar if not better prototype" within two weeks.

TIME AND MONEY

The consulting firm said it would need another six to eight months and several hundred thousand dollars to finish the HIDB Java program, officials said. Hilton Hotels instead opted to use the Vision Jade tool. With the help of two Vision employees and a consultant, the company expects to finish the project in three months and begin rollout in mid-September.

The overall project cost is roughly the same, but Hilton Hotels will be getting the work done in roughly half the time, while gaining Vision development tools that it can use on other projects, Hellyer said.

Browser-based applications are proving useful for the Hilton chain, given its distributed nature, Hellyer said. Beverly Hills, Calif.-based Hilton Hotels owns, manages and franchises 256 hotels worldwide, and its sister Hilton International Corp., owned by Ladbroke Group PLC in Watford, England, has another 166. All will now be able to send, view and update data via browsers.☐

Netscape

CONTINUED FROM PAGE 33

ditional components by using Java or JavaScript to customize an application, said Netscape senior product manager Desten Broach. For instance, a developer might use JavaScript to query a database for information.

Pennsylvania's Office of the Attorney General is using a test version to create a World Wide Web-based workflow application to manage costs of the automobiles used by its 23 regional offices.

"We figure it's going to drop our costs and time down to one-third of what it is now," said Peter Sand, the office's chief information officer.

Rather than filling out paper-based mileage and expense reports, employees will be able to log on to a Web browser and type the necessary information into an electronic form, which will be stored on a server. The form will make any necessary calculations. A manager will be notified via E-mail that the form is awaiting approval.

A similar routing system can be set up for other managers or payment processors who need to be involved in the process, and the data can be presented in whatever form best suits the user.

"It's not your same old, same old workflow," said Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston. "It is clearly a new design that is focused on the extranet and leveraging the use of the LDAP [Lightweight Directory Access Protocol]."

Unlike a traditional workflow application designed for use within a company, Process Manager is Web-based and can be used to let firms engage in workflow with their business partners or external customers.

User data, access privileges and employee roles can be managed through an LDAP-compliant directory server, which comes with the new product.

The LDAP-based system gives companies more flexibility, Broach said. Rather than having to specify the person who will perform a task, a company can set up a hierarchical, role-based system in the directory server. Changes can be made in the directory rather than in each piece of the workflow application.

Process Manager comes bundled with Netscape's Enterprise Web and directory servers, which support LDAP but can be used with any LDAP-enabled directory.

Process Manager is available now for private beta-testing. The final product is due this fall. Pricing will begin at $9,995 for a starter bundle that includes 100 client licenses, 100 Netscape Directory Server users, Netscape's Enterprise Server and two Process Manager Builder seats. The cost for unlimited usage is $49,500 per server.☐

[illegible] g the O[illegible]
[illegible] WEST wi[illegible]
[illegible] n bri[illegible]
US WEST

The Enterprise Network

LANs • WANs • Network Management

Briefs

Priority routing

Bay Networks, Inc. recently announced a road map for products that will let information systems managers allocate network resources on a per-application basis. The vendor's Optivity Policy Services plan includes products that will let users create and program instructions to network devices that call for priority handling of mission-critical applications over less important ones. The first new product will ship in the second quarter of next year.

Mail migration

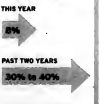
Sun Microsystems, Inc. said it will use messaging migration tools from Wingra Technologies in Madison, Wis., to connect its Internet Mail Server with Microsoft Exchange, Lotus Notes and Novell's GroupWise. The announcement extends a previous agreement. The first release with the additional gateways is scheduled for the fourth quarter. Pricing wasn't available.

Platinum purchase

Network management vendor Platinum Technology, Inc. in Oakbrook Terrace, Ill., has acquired Memco Software Ltd. in Tel Aviv in a tax-free, stock-for-stock pooling of interests. The deal was valued at just over $400 million, a Platinum spokesman said. Memco will become a wholly owned subsidiary of Platinum once Memco shareholders and the U.S. Securities and Exchange Commission approve it.

SLOWDOWN

Growth of the network product market



Source: In-Stat, Inc., Scottsdale, Ariz.

Telco union deals worry some users

▸ *Will workers be trained in latest tech?*

By Matt Hamblen

TELECOM SYSTEMS

SOME BUSINESS USERS worry about unions representing workers in the large voice and data carriers, saying union work rules and high-tech training programs aren't producing workers who respond to their needs like the nonunion shops.

But officials at the Communications Workers of America (CWA) union and Bell Atlantic Corp. in New York recently penned a two-year deal for 73,000 union workers that they said will bring customers well-trained workers through an unusual training program called Next Step to install and service new data technologies.

Unions at the carriers seem to be as healthy as ever, with several contracts forged by Bell Atlantic and other carriers this year. (A strike begun by CWA workers last week at Denver-based US West, Inc. is a notable exception.)

The CWA also forged agreements this year with BellSouth Corp., AT&T Corp. and Ameritech Corp.

Still, some business customers of Bell Atlantic said they are concerned about union workers who seem incapable of doing certain jobs or who adhere to arcane work rules that prevent them from doing so.

"I don't think it's realistic for the carriers to use union help

Unions, page 38

JOHN RITTER

Third-party tools take swat at E-mail bugs

By Roberta Fusaro

E-MAIL VENDORS so far have been successful at repelling the swarm of E-mail glitches that have fluttered in recently.

But some analysts said third-party tools may be a good way to swat E-mail bugs in products from Microsoft Corp., Netscape Communications Corp. or other vendors.

Among recent problems was the long file-name bug, reported last month by Finnish researchers. It can affect some versions of Microsoft Outlook and Outlook Express programs and Netscape'a Mail. It occurs if a mail attachment has a file name that exceeds 200 characters; malicious code could be tacked on the end of the file-name string, executed and damage a user's hard drive or system.

Just days after news of that flaw, a security hole was reported in the popular Eudora messaging program from Qualcomm.

E-mail bugs, page 38

Cabletron offers certification

By Bob Wallace

TO HELP INFORMATION systems managers rest easy that their network staffers have the full spectrum of knowledge needed to run their enterprise networks, Cabletron Systems, Inc. last week announced a certification program for its products.

Vendors typically develop certification programs to provide customers formal training in how to operate and maintain increasingly complex and important products.

"Their equipment is getting more sophisticated, so if you're going to depend on it, like we do, you had better know it," said Rnbert Hn, network specialist at financial services giant ABN Amro North America, Inc., which uses Cabletron equipment to support its trading floor. "It's nice to be general, but it's a good thing to be specific [regarding equipment knowledge]."

With Cabletron's Professional Certification Program, users participate in a series of courses and must then pass a certification exam administered by a technology testing firm. The program centers on design, implementation, configuration and troubleshooting of Cabletron's LAN switching and network management offerings.

Cabletron has offered training on an ad hoc basis for its

Certification, page 38

This security catches on – slowly

By Suruchi Mohan

WELCOME TO the world of electronic commerce, where people have more Maalox moments than they would care to admit. Some are experimenting with the latest wonder drug: public-key infrastructure (PKI).

PKI is a comprehensive set of functions for encryption and digital services. Its components include a directory, a certification authority and certification revocation lists. PKI's most popular feature is its two sets of keys — a public key and a private key — for encryption and digital signatures.

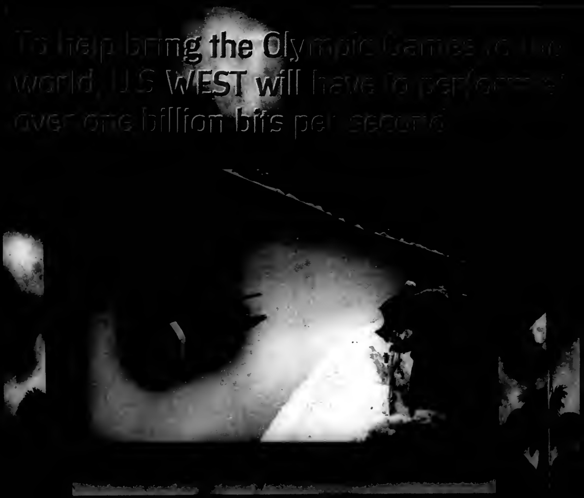
Despite its promise, PKI has been slow to catch on. One reason: Only "Type A" organizations with a pioneering spirit — such as NationsBank Corp., Scotiabank, Federal Express Corp., US West, Inc. and government institutions in the U.K.

PKI, page 38

AN ANATOMICAL VIEW

Public-key infrastructure assures that

- **You are who you say you are**
- **You are authorized to be where you are on the network**
- **No one has read or tampered with your message**


To help bring the Olympic Games to the world, U S WEST will have to perform at over one billion bits per second.

[illegible]

The Enterprise Network

LANs • WANs • Network Management

Briefs

Priority routing

Bay Networks, Inc. recently announced a road map for products that will let information systems managers allocate network resources on a per-application basis. The vendor's Optivity Policy Service plan includes products that will let users create and program instructions to network devices that call for priority handling of mission-critical applications over less important ones. The first new product will ship in the second quarter of next year.

Mail migration

Sun Microsystems, Inc. said it will use messaging migration tools from Wingra Technologies in Madison, Wis., to connect its Internet Mail Server with Microsoft Exchange, Lotus Notes and Novell's GroupWise. The announcement extends a previous agreement. The first release with the additional gateways is scheduled for the fourth quarter. Pricing wasn't available.

Platinum purchase

Network management vendor Platinum Technology, Inc. in Oakbrook Terrace, Ill., has acquired Memco Software Ltd. in Tel Aviv in a tax-free, stock-for-stock pooling of interests. The deal was valued at just over $400 million, a Platinum spokesman said. Memco will become a wholly owned subsidiary of Platinum once Memco shareholders and the U.S. Securities and Exchange Commission approve it.

SLOWDOWN

Growth of the network product market

THIS YEAR

8%

PAST TWO YEARS

30% to 40%

Source: In-Stat, Inc., Scottsdale, Ariz.

Third-party tools take swat at E-mail bugs

By Roberta Fusaro

E-MAIL VENDORS so far have been successful at repelling the swarm of E-mail glitches that have fluttered in recently.

But some analysts said third-party tools may be a good way to swat E-mail bugs in products from Microsoft Corp., Netscape Communications Corp. or other vendors.

Among recent problems was the long file-name bug, reported last month by Finnish researchers. It can affect some versions of Microsoft Outlook and Outlook Express programs and Netscape's Mail. It occurs if a mail attachment has a file name that exceeds 200 characters; malicious code could be tacked on the end of the file-name string, executed and damage a user's hard drive or system.

Just days after news of that flaw, a security hole was reported in the popular Eudora messaging program from Qualcomm.

E-mail bugs, page 38

Telco union deals worry some users

▸ *Will workers be trained in latest tech?*

By Matt Hamblen

TELECOM SYSTEMS

SOME BUSINESS USERS worry about unions representing workers in the large voice and data carriers, saying union work rules and high-tech training programs aren't producing workers who respond to their needs like the nonunion shops.

But officials at the Communications Workers of America (CWA) union and Bell Atlantic Corp. in New York recently penned a two-year deal for 73,000 union workers that they said will bring customers well-trained workers through an unusual training program called Next Step to install and service new data technologies

Unions at the carriers seem to be as healthy as ever, with several contracts forged by Bell Atlantic and other carriers this year. (A strike begun by CWA workers last week at Denver-based US West, Inc is a notable exception.)

The CWA also forged agreements this year with BellSouth Corp., AT&T Corp. and Ameritech Corp.

Still, some business customers of Bell Atlantic said they are concerned about union workers who seem incapable of doing certain jobs or who adhere to arcane work rules that prevent them from doing so.

"I don't think it's realistic for the carriers to use union help

Unions, page 38

Cabletron offers certification

By Bob Wallace

TO HELP INFORMATION systems managers rest easy that their network staffers have the full spectrum of knowledge needed to run their enterprise networks, Cabletron Systems, Inc. last week announced a certification program for its products.

Vendors typically develop certification programs to provide customers formal training in how to operate and maintain increasingly complex and important products.

"Their equipment is getting more sophisticated, so if you're going to depend on it, like we do, you had better know it," said Robert Ho, network specialist at financial services giant ABN Amro North America, Inc., which uses Cabletron equipment to support its trading floor. "It's nice to be general, but it's a good thing to be specific [regarding equipment knowledge]."

With Cabletron's Professional Certification Program, users participate in a series of courses and must then pass a certification exam administered by a technology testing firm. The program centers on design, implementation, configuration and troubleshooting of Cabletron's LAN switching and network management offerings.

Cabletron has offered training on an ad hoc basis for its

Certification, page 38

This security catches on – slowly

By Suruchi Mohan

WELCOME TO the world of electronic commerce, where people have more Maalox moments than they would care to admit. Some are experimenting with the latest wonder drug: public-key infrastructure (PKI).

PKI is a comprehensive set of functions for encryption and digital services. Its components include a directory, a certification authority and certification revocation lists. PKI's most popular feature is its two sets of keys — a public key and a private key — for encryption and digital signatures.

Despite its promise, PKI has been slow to catch on. One reason: Only "Type A" organizations with a pioneering spirit — such as NationsBank Corp., Scotiabank, Federal Express Corp., US West, Inc. and government institutions in the U.K.

PKI, page 38

AN ANATOMICAL VIEW

Public-key infrastructure assures that

- You are who you say you are
- You are authorized to be where you are on the network
- No one has read or tampered with your message

Unions spur concern

CONTINUED FROM PAGE 37

long term," said John F. Cunnane, a manager of distributed systems at Insurance Services Office, Inc. in Pearl River, N.Y. Referring to Bell Atlantic's Next Step program, he added, "Considering the caliber of the union people they employ, I don't see many of them moving from the [telephone] pole to the PC very easily."

SLOWER SERVICE

Jim Shea, director of telecommunications at Boston University in Boston, said even though he was glad the recent strike against Bell Atlantic ended in two days, there still will be a problem with how the union workers adhere to work rules of what they can or can't do. And that tends to slow down service jobs.

"I've seen a union worker say he can't do a job because it's the job of the widget guy, and the widget guy is out," Shea said. "At the other nonunion companies, the technicians take more ownership of a problem."

Scott Matluck, president of the Communications Managers Association in Morristown, N.J., a large user group, said he has the impression of union help that their work is "satisfactory," but he said association members are always on the lookout for alternative carriers, which are in short supply [CW, Aug. 17].

CWA spokeswoman Candice Johnson dismissed criticism from customers as "antiunion bias or griping, and there's no small amount of that around."

She said the CWA has conducted studies showing that productivity levels of unionized companies are higher than the nonunion companies and that the net income produced for unionized companies is higher. But Johnson didn't have details.

"Union employees give us an advantage," Bell Atlantic spokesman Steve Marcus said. Given the experience in the recent talks, Bell Atlantic will be willing to renegotiate in two years when the contract expires, he said. "They are experienced and skilled and very well-trained," Marcus said.

And Bell Atlantic expects the Next Step program to ensure that the union workers keep their skills current. Bell Atlantic officials plan to spend $50 million on Next Step over five years to give union technicians associates degrees at community colleges and time off each week to learn telecommunications skills [CW, June 30, 1997].

One objective is to give field service workers the computer skills needed to access customer and switching data stores in mainframes. □

CWA membership at major telephone companies

COMPANY	MEMBERS
Lucent Technologies*	26,000
Ameritech	30,000
US West	36,000
BellSouth	48,000
AT&T	50,000
Bell Atlantic	73,000
SBC Communications	76,000

* Not a carrier but formerly a part of AT&T

Source: Communications Workers of America, Washington

Swatting E-mail bugs

CONTINUED FROM PAGE 37

Inc. An attacker could exploit the Hypertext Markup Language reader in Eudora by inserting in an E-mail message a link to an Internet site that can execute malicious code.

All three vendors have posted software patches at their World Wide Web sites.

But some third-party companies are tweaking their products or reintroducing them as another way to handle E-mail security breaches. The companies said their options may be easier to deploy — often from a central server — than trying to install patches from the larger vendors at each desktop or client site. For example, Sendmail, Inc., which makes software to route E-mail through the Internet, is offering at its Web site free software that traps E-mail messages with long file-name attachments at the server.

WorldTalk Corp. in Santa Clara, Calif., said its WorldSecure Server software already offers protection from the long file-name flaw, and the company released an upgraded version of the software that includes a default policy to address the bug.

And Cupertino, Calif.-based Trend Micro, Inc. offered users a free 30-day copy of its InterScan VirusWall scanning software that detects the long file name and quarantines potentially malicious E-mail messages.

Mark Levitt, a messaging analyst at International Data Corp. in Framingham, Mass., said the third-party tools have their niche. In some cases, a user might have to wait weeks for a fix from Microsoft, Netscape or another big vendor. And although the bug is still a theoretical threat, corporations need to worry about what might happen in the meantime, he said.

PATCHES POSTED

So far, no exploitations of the E-mail security holes have been reported outside of laboratory tests.

Eric Arnum, editor of "Electronic Mail and Messaging Systems," a newsletter in Forest Hills, N.Y., said it is unlikely a hacker would use E-mail as the intrusion tool of choice: The programs leave too much of an audit trail compared with other hacking techniques. "It's not that you can't do it; it's that you have to live with it afterward," Arnum said. And there aren't a whole lot of unsolved E-mail attacks, he said. □

Certification

CONTINUED FROM PAGE 37

customers but no formal curriculum.

Certification levels include Cabletron Specialist, for users who want to document their proficiency in one area, such as Asynchronous Transfer Mode. They can also certify in multiple areas by taking and passing several specialized courses. Each course costs $1,500 to $3,000, test included.

Students can become a Cabletron Systems Engineer by taking and passing all Cabletron Specialist courses, which costs $11,000 to $14,000, test included. Users who consider themselves proficient but want the certification can skip the training and take the test for $199.

Mark Levine, senior network analyst at defense contractor Aerojet in Sacramento, Calif., plans to send two staffers to become Cabletron Specialists in LAN switching. Aerojet is preparing to connect 3,700 desktops using switches.

"It's important that they understand the technology they'll be working with," Levine said. "It's not just how things work; it's why things work that's useful with troubleshooting."

Cabletron competitor Cisco Systems, Inc. already offers a multitiered program for its customers.

Cabletron's program also may benefit many users who don't enroll by making sure the resellers and consultants they hire are up to snuff.

"If you get your support from a certified reseller, you can have confidence that you'll get the high level of support you need," said Jeff Gray, an analyst at Dataquest in Lowell, Mass. □

Cabletron's Professional Certification Program

For: Network managers, technical support professionals and resellers

Goal: To build competency in design, implementation, configuration and troubleshooting of the vendor's switching and management offerings

Two tiers

- Cabletron Specialist, which focuses on specific products and technologies
- Cabletron Systems Engineer, which involves mastering the whole curriculum

Source: Cabletron Systems, Inc., Rochester, N.H.

PKI security catches on

CONTINUED FROM PAGE 37

and Canada — see PKI as a significant means to a secure electronic-business end.

A primary reason is the technology's complexity. And a directory services infrastructure is needed.

That takes a lot of time. Roger White, vice president of information security at NationsBank in Charlotte, N.C., is starting from scratch. He plans to use a Lightweight Directory Access Protocol-based X.500 directory to consolidate 180 directories companywide.

The directory also will support PKI to authenticate customers making home-banking transactions and employees accessing bank accounts and business applications or for physical access to buildings. The first of those applications, home banking, will be launched early next year.

Jim Mohrhauser, director of retail markets at US West in Denver, has had a PKI in place for about four months. He looked at other security scenarios, such as log-in, PIN and IP security. "They all work well to a point," Mohrhauser said. But they fell short when he started looking at business-to-business applications.

PKI works for US West because it pushes the primary responsibility of maintaining certificates issued by a certificate authority to its business partners. For instance, if an employee at a business partner departs, US West doesn't have to worry about plugging a security hole in the partner's system.

Eventually, users and analysts agreed, directories will move toward Directory Enabled Networks, consolidated directories that store information about people and objects. PKI will be able to take full advantage of that.

"The public should be patient," White said. "The roads that first came out were dirt, then paved and then the freeways, which were built in the '50s. PKI is like the freeways, with on- and off-ramps." □

MORE ONLINE

www.computerworld.com/commerce

For an expanded version of this story, visit Emmerce, Computerworld's webzine on electronic commerce, updated biweekly.

Software

Databases • Development • Operating Systems

Briefs

Top-selling business software, first-half 1998

WINDOWS 95/NT

1. Microsoft Windows 98 upgrade
2. Microsoft Windows 95 upgrade
3. Network Associates VirusScan 3
4. Norton Antivirus 4
5. Norton Utilities 3.0

Based on units sold by 42 retail and mail-order chains, representing more than 70% of the U.S. market

Source: PC Data, Reston, Va.

Deploy R/3 faster

Dallas-based AutoTester, Inc. last week released a package of R/3 testing software, consulting services and planning guidelines for users of SAP AG's AcceleratedSAP rapid deployment methodology. AutoTester said its Accelerated Quality Suite 4.0 bundle maps directly to the SAP scheme, which is aimed at squeezing midsize R/3 projects down to 12 months or less. Pricing for the AutoTester package starts at $125,000.

CA upgrades

Prestige Software International last week announced a customization tool that lets users access data in its Masterpiece/Net financial applications from Excel spreadsheets and other desktop products. The CA unit, based in Islandia, N.Y., also released Masterpiece/Net 1.2, which adds tighter integration and new rapid data entry screens. Pricing for Masterpiece/Net starts at $50,000 on NT.

Developers needed

IBM is looking for software developers to test a Java applications management system, code-named Project Orion, that would make a server the single point of access and control for client applications. Developers looking to test it can register at www.ibm.com/java/[illegible].

Y2K: Who's ready to pitch in?

By Thomas Hoffman

ELI LILLY AND CO. has found another way to manage its year 2000 workload.

For the past year, the Indianapolis pharmaceutical company has used software to figure out when any of its 1,500 information systems workers worldwide become available for millennium project tasks. That means project leaders such as Mike Skiles can determine that John Q. Smith is set to finish work on a data mining project by Sept. 1 and can schedule him for some year 2000 work before his next commitment.

Platinum has given Eli Lilly a resource-based view of its millennium project.

The software, Platinum Process Continuum from Platinum Technology, Inc. in Oakbrook Terrace, Ill., "gives us an enterprise view of what's happening with the project, not just a pocket of action that's occurring," Skiles said.

Eli Lilly's IS staff is decentralized across a swath of business units, and the year 2000 project represented "the first time business areas were forced to share resources," Skiles said. Business units are responsible for their respective pieces of the year 2000 project, and the project management office monitors the total effort.

Still, displaying project plans for all business units to see "was a huge culture shock" at the company, Skiles said. After an initial pilot with one of the medical units, it took six months for other business units to latch on to the concept. "We're like any big business," Skiles said. "People are spread out through the organization, have their own business plans and not a whole lot of sharing goes on."

Lilly's resource-based project management approach is the exception rather than the norm, said Stephanie Moore, an analyst at Giga Information Group in Westport, Conn. To date, most large companies are managing their year 2000 projects with task-based project management packages such as Microsoft Corp.'s Project, she said.

The software has presented Lilly with some challenges. Although the system has been useful in helping the company factor in the availability of staff to predict the length of a project phase, the system from the vendor calculates in man-hours. At Lilly, "people don't think in terms of hours, how long it takes to test a program or fix code — they think in days, weeks and months," said Skip Littell, year 2000 project manager for the company's U.S. marketing group.

Skiles declined to quantify the cost of the Platinum software. But without it, he said, "we'd probably be doing what most companies are doing, and attacking one area at a time." ☐

Inprise gambles on enterprise

▸ *Smaller developers fear they'll be left behind*

By David Orenstein
DENVER

INPRISE CORP. has launched what CEO Del Yocam called a "bold quest" to be a major supplier of enterprise programming tools and server software. But the enterprise strategy risks alienating the company's base of small developers and isn't a sure bet in the corporate market.

Inprise CEO is bullish about jump into enterprise

The centerpiece of the strategy — the Inprise Application Server — was unveiled for about 3,000 users at the annual conference here two weeks ago and will be released to the public later this year. Inprise, formerly Borland International, Inc., is based in Scotts Valley, Calif.

The software will feature tight integration with Inprise's Delphi, Borland JBuilder and C++Builder tools, as well as a Common Object Request Broker Architecture-based transaction server. As with many of the more than 20 application servers coming to market this year and next, the Inprise offering will support Enterprise JavaBeans.

Karen Boucher, an analyst at The Standish Group International, Inc. in Dennis, Mass., said Inprise's rookie status in enterprise computing may give large users pause about using its server for mission-critical applications. But for less-sensitive work, companies will find the ease of developing with Borland tools very appealing, she said.

Brian Escott, project manager at H&R Block, Inc. in Kansas

Enterprise, page 42

Tool shoots live data to banner ads

By Nancy Dillon

Dean Lucas, Web design manager at ETrade Group, Inc. in Palo Alto, Calif., hates lifeless Internet banner ads.

"I put Post-It notes on my monitor to block them out," he said. "If there's no relevant data in them, they're just eyesores."

To guard against banner irrelevancy at ETrade, an online investment services provider, Lucas said he plans to implement new software, called Generator, in the next six weeks.

Generator, from San Francisco-based Macromedia, Inc., can pull live information from Open Database Connectivity (ODBC) databases, text files, cookies or uniform resource locators and then publish the information as dynamic graphics.

Lucas said that once instituted, the new banner system would kick in whenever

Banner, page 44

Enterprise quest a gamble

CONTINUED FROM PAGE 39

City, Mo., said his happy history with Borland tools is what attracts him to the idea of an Inprise Application Server. "At this moment, we're still evaluating all [the options] and just leaning toward Inprise," he said.

Paul Giroux, chief information officer at Clearwater Arctic Surf Clam, a division of Bedford, Nova Scotia-based Clearwater Fine Foods, Inc., said he is interested in the Inprise Application Server's advertised ability to simplify enterprise application development.

John Melka, senior vice president and manager of information systems tools at NationsBanc Services, Inc. in Chicago, is a member of Inprise's newly formed Customer Advisory Board. He also is an ardent supporter of Inprise's transition to enterprise tools.

"I see them as being quite a way along the way," Melka said. "I don't think they've made the transition fully. They have to meld two cultures together." Melka said he was referring not only to the corporate cultures of Borland and Visigenic, Inc., which Inprise acquired earlier this year, but also to the different cultures of large users and smaller developers.

Melka acknowledged that Inprise's smaller customers have felt uneasy about the new direction but added that the company has a broad array of offerings for customers at all levels.

Even so, "there is a definite underlying feeling among many [smaller] developers that they're being forgotten about," said Steve Colagiovanni, a programmer at The Pinnacle Corp. in La Porte, Ind. □

Solaris, Inprise to team up

Inprise and Sun Microsystems, Inc. will work together to develop Inprise development tools for the Solaris platform, the companies announced recently at Inprise's user conference.

Sun, which some analysts view as offering weak tools, hopes Inprise can make development for Solaris easier. Inprise, meanwhile, views the Solaris platform as an important one in key vertical industries such as finance and telecommunications.

— David Orenstein

NEW PRODUCT

PILOT SOFTWARE has announced Pilot Decision Support Suite Version 6, software that analyzes operational, market and customer data to uncover trends.

According to the Cambridge, Mass., company, the suite incorporates predictive data mining, online analytical processing support for ActiveX and point-and-click customization tools. Version 6 enhancements include a Briefing Book Viewer that lets users save analyses, an improved quadrant analyzer that can offer three-dimensional perspectives and simplified maintenance.

Pricing starts at $40,000.

Pilot Software
(617) 374-9400
www.pilotsw.com

Banner idea gives Internet ads new sizzle

CONTINUED FROM PAGE 39

a World Wide Web page containing an ETrade banner is requested. A call would go out to Generator on an ETrade, Unix-based Web server. Generator would reference an ODBC database on the ETrade network, and the most up-to-date news headlines or stock prices would stream back to the banner.

Lucas said ETrade has 20 to 30 banner styles posted on Web sites such as America Online and Microsoft Investor.

To do that without Generator would require a team of four programmers working around the clock doing manual updates, Lucas said. In today's market, those programmers would fetch between $80 and $100 per hour.

In the future, Lucas said, he would like to use Generator for interactive tutorials on how to trade online and to create charts that can update themselves without having to be completely redrawn.

Analysts said other products can dynamically publish database information to the Web — such as Microsoft Corp.'s Active Server Pages or Allaire Corp.'s Cold Fusion.

But they said Generator differs because it can turn culled information into graphics — not just into static Hypertext Markup Language tables.

And they noted the significance of the server software's ability to play back graphics as Flash (a Macromedia format), graphics interchange format, JPEG or PNG files, depending on the client's viewing capabilities.

> Macromedia's Generator differs from other products in dynamically publishing database information to the Web because it can turn culled information into graphics — not just into static Hypertext Markup Language tables

"Its ability to assemble components in the appropriate end-user format is an improvement over developing two sites in parallel: one fork for people with the Flash plug-in and one fork for people without it," said Paul Hagan, an analyst at Forrester Research, Inc. in Cambridge, Mass.

INTERACTIVE EXPERIENCE

Ali Ebtekar, senior art director at San Francisco-based marketing agency Darwin Digital, used Generator to turn a "dry" shopping-cart application into an interactive experience. The project dealt with client Hewlett-Packard Co.'s Kayak workstation line.

Ebtekar said he combined Generator with a Microsoft Access database that HP managers populate with the latest pricing, specifications and configurations.

"Now visitors play with a 3-D cube to try different options," Ebtekar said. "And soon, we'd like to connect the site with an inventory database and add mini-demonstrations of different product aspects."

Ebtekar said he sees Flash as an integral part of the Kayak site because "Flash is vector-based, so it's very compact and efficient at handling graphics."

Both Ebtekar and Lucas said they also looked into custom Java scripting to accomplish what Generator does. But both agreed Generator was a more cost-effective alternative. "We didn't want to re-invent the wheel," Ebtekar said.

Macromedia's Generator server software costs $2,999 per processor. The Developer's Studio costs $499 per license. □

Servers & PCs

Large Systems • Workstations • Portable Computing

Briefs

Business PC

NCR Corp. in Dayton, Ohio, has announced the [illegible], a PC for the retail, financial, and banking industries. According to NCR, the PC has a 266-MHz Intel Corp. Celeron processor. It includes software for local and remote network systems management and is tuned to run point-of-sale, self-service banking and back-office management applications from NCR. Pricing starts at $1,000.

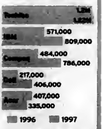
E-commerce server

Technauts, Inc. in Research Triangle Park, N.C., has announced the EServer 750, a World Wide Web server for electronic commerce. According to Technauts, the "thin" server is for small and mid-size offices that want to create an Internet site or develop an intranet. Software for E-mail, Web hosting, configuration, management and security is included. The EServer 750 costs $1,895.

Flat-panel display

ViewSonic Corp. in Walnut, Calif., has announced the VP150, a 15-in., wall-mountable flat-panel display. The display has a resolution of 1,024 by 768 pixels and a 3-in. depth. It supports 16.2 million colors. ViewMatch software lets users adjust color temperature and intensity for screen-to-print matching. The VP150 costs $1,495.

U.S. portable PC shipments, by vendor



Based on vendor shipment data

Source: International Data Corp., Framingham, Mass.

• PC makers are finding what works

More businesses buying PCs online

By April Jacobs

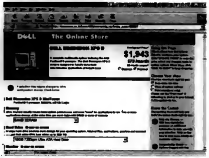
CORPORATE USERS are increasingly turning to PC makers' and resellers' World Wide Web sites to buy desktops online. And though not all Web sites are equal, the trend has nowhere to go but up, according to analysts.

Online corporate buying of desktop PCs will increase by 10% to 20% per year over the next few years, according to Giga Information Group in Cambridge, Mass.

Online corporate buying of PCs will increase by 10% to 20% per year

Leading the PC-maker pack so far is Round Rock, Texas-based Dell Computer Corp., with online sales totaling about $6 million per day. Dell accounts for at least half of total PC purchasing online today, according to Framingham, Mass.-based International Data Corp. (IDC). That's because Dell has made online selling as high a priority as selling through traditional channels, said IDC analyst Roger Kay.

Dell's Web site offers more features than other PC makers' sites. For example, Dell builds individual, customized Web pages for corporate customers. Known as Premiere Pages, they let customers track purchases and maintain standards, and they feature order forms that contain only company-approved options.



Analysts call Dell's Web site the most sophisticated of the PC makers', though rivals are making gains in online sales tactics

Hilly Fuchs, assistant vice president of information systems at New York-based Continental Grain Co., said his company is a longtime Dell customer and is now in the process of setting up a Premiere Page.

"We're trying to solidify standards for purchasing, and that's difficult because they change so fast," Fuchs said. "We think this is going to help us smooth out the purchasing process."

More businesses, page 46

Smart card update

London's transit to use no-contact cards by 2002

By Kristi Essick

RIDERS OF London's underground subway and the city's famous red, double-decker buses will pay for their journeys using a contactless smart-card system come 2002.

The Tube, as London's subway is called, and the buses are set to benefit from a facelift that will see the transportation system adopt smart cards as the main method of payment for travel in four years, according to London Transport, the government agency responsible for both sys-

Transit, page 46

Put a Big Mac on my smart card, please

By Kristi Essick

"ONE BIG MAC, a small Coke and fries coming right up. Will that be cash or smart card?"

EUROPE SETS THE TREND

At 870 McDonald's restaurants across Germany, the familiar clink of the cash register will soon be replaced, in part, by a payment system that lets customers pay for goods using stored-value smart cards.

Stored-value smart cards are most often used to store electronic cash on a chip embedded in a credit card-like device that can be used to purchase low-

Big Mac, page 46

In Unix race, users are the winners

By Jaikumar Vijayan

THE STRUGGLE for market share among the top Unix vendors is resulting in a performance windfall for users.

Just last week, IBM revamped its RS/6000 S70 Unix server lineup with a new, twice-as-fast processor. The company also cut prices on its older model S70 by up to 30% and slashed memory prices by up to 40%.

At Blue Cross/Blue Shield of Tennessee, this has translated into an 88% application-level performance gain, said Bob Venable, manager of enterprise systems. The Chattanooga-based insurer runs all of its major health care management applications on RS/6000 servers.

"We are obviously thrilled," Venable said. "We are getting this sort of a performance boost just by upgrading the processor."

IBM's announcement of the upgrade was more than three months earlier than originally scheduled and comes at a time of intense market-share struggle with Hewlett-Packard Co. and Sun Microsystems, Inc.

The three vendors are locked in a close battle for market share, with each holding approximately 20% of Unix revenues, according to the latest figures from research firm International Data Corp. in Framingham, Mass.

"There is a good deal of accelerated product development cycles to compensate for pricing differences that arise" every time one of these vendors announces a new product, said

Unix race, page 46

IBM boosts its RS/6000 lineup

New Enterprise Server Model S70

- Based on new generation 262-MHz RS64-II chip
- Nearly doubles performance over previous generation models
- [illegible]

Big Mac

CONTINUED FROM PAGE 45

value items such as bus tickets, newspapers and food. Smart cards eliminate the need for merchants to communicate with banks for authorization of purchases.

In the coming months, customers at McDonald's Deutschland, Inc. restaurants will be able to pay for goods by swiping smart cards through small, countertop terminals.

They also will be able to add value to their smart cards by downloading money electronically from their bank accounts at touch-screen terminals in the restaurants. The terminals will lead users through the process of downloading new money to the cards.

McDonald's Deutschland tested smart-card terminals in 55 stores earlier this year. During the first 10 weeks of the trial, 30,000 transactions were conducted, according to Hewlett-Packard Co.'s VeriFone unit, which provides the terminals.

Though smart cards are catching on in Germany, there hasn't been an easy way to add value to the cards, said Rolf Kreiner, senior vice president of marketing at McDonald's Deutschland. By letting customers not only buy goods, but also add value to their cards, McDonald's is hoping to lead a trend toward the wide-scale acceptance of smart cards in Germany, he said.

Europe is leading the way in the adoption of smart-card technologies. Stored-value telephone cards have been in use in several European countries for many years. But the absence of a universal standard that lets all cards be used with all readers has curtailed widespread use.

A smart-card trial is under way at four New York Burger King Corp. restaurants that are using Mondex Corp. terminals, but the U.S. lags far behind Europe in acceptance of the technology.

The German smart-card payment infrastructure, known as GeldKarte-System, has about 40 million cards in circulation, according to VeriFone. McDonald's will use VeriFone's SC552 smart-card reader, which supports GeldKarte-System cards.

The system that will let users add value to their cards will be separate from the smart-card readers and will be called Transaction Automation Loading and Information System (TALIS), VeriFone said. While customers wait for TALIS terminals to connect to their banks, the screens can flash advertising and marketing messages — a feature McDonald's plans to use. □

Essick writes for the IDG News Service in Paris.

London's transit to use cards by 2002

CONTINUED FROM PAGE 45

tems. Smart cards resemble credit cards but include microprocessors that store data and execute simple computational processes.

London Transport has awarded a contract worth 1 billion pounds ($1.65 billion) to a consortium of companies known collectively as TranSys to build, implement and maintain the system. TranSys includes Cubic Corp. in San Diego; Electronic Data Systems Corp. in Plano, Texas; British computer maker ICL PLC; and AS Atkins, a management and engineering consultancy.

The upgrade from the current system, which features the Tube's disposable paper magnetic-strip cards (similar to those used in San Francisco's subway system) and the bus system's printed paper tickets, will include the installation of smart-card readers on all 5,800 buses and the replacement of existing ticket gates across the underground network, London Transport officials said.

Riders won't have to swipe the smart-cards, which can be read as a person passes through a ticket gate even if they are in a pocket or briefcase.

GATE-JUMPERS BEWARE

London Transport hopes the high-tech machines will virtually eliminate fare dodgers who take free rides on the Tube and buses. That problem costs the organization millions of pounds each year. A rider who isn't carrying an appropriately loaded smart card won't be able to pass through the gates, officials said.

Travelers will be able to buy and add value to smart cards at touch-screen machines in Tube stations or from news agents currently equipped to sell the magnetic-swipe tickets, London Transport officials said.

London Transport hasn't spelled out exactly how the smart cards will replace the existing system, which offers riders everything from one-way tickets to yearlong, long-distance travel cards. Most likely, users will pay for the services they require and machines will download the appropriate information on to the card. For example, one rider could purchase a card for monthly travel in three zones, while another could purchase a card for 10 one-way rides.

Should the system deliver on its promises, public transport will be easier to use and ticket purchases will be faster, London Transport claimed. As government subsidies have declined over the past few years, certain lines of the much-used Tube have fallen into a lamentable state, with frequent breakdowns and rising fares. □

Essick writes for the IDG News Service in Paris.

More businesses buying PCs online

CONTINUED FROM PAGE 45

Fuchs said a Web-based tracking system will let all employees involved in the purchasing process simultaneously view information on standards and prices. That will help Continental Grain avoid duplicate processes, saving time and money.

COMPETITORS ONLINE, TOO

Other PC makers offer online sales as well. For example, Gateway in North Sioux City, S.D., offers a system of direct online sales of desktop PCs similar to Dell's. Gateway's Web site features a virtual shopping cart and lets consumers configure hardware before buying.

Gateway spokesman Jeff Hanson said the company has begun to offer large corporate and education accounts Web pages that show standard configurations for their organizations, to make ordering simpler and help track hardware.

Compaq Computer Corp.'s DirectPlus online sales program lets end users buy equipment from the Houston-based company's Web site. The site features a virtual shopping cart and lets purchasers check the status of their orders.

IBM and Hewlett-Packard Co. provide information about a range of models online, but redirect potential buyers to dealers' Web sites to complete sales.

As part of its channel assembly program, HP lets customers configure their own systems at authorized dealers' Web sites. That gives buyers the equivalent of build-to-order machines such as Dell provides, but the middleman is the builder. □

IBM's Web site provides information about PCs, but directs potential buyers to resellers' sites

Gateway's Web site features a virtual shopping cart and allows users to configure PCs online

Unix race benefits users

CONTINUED FROM PAGE 45

Rich Partridge, an analyst at D. H. Brown and Associates, Inc. in Port Chester, N.Y.

Since Sun started shipping its high-performance 64-processor Ultra Enterprise last summer, both HP and IBM have revamped their high-end Unix lines — HP with its new V-Series, and IBM with performance-boosting upgrades to its existing processors.

In addition, HP has started sampling its next-generation PA-8500 chip and hopes to start shipping servers based on the chip later this year.

With all the activity in the Unix space, "users can be reasonably sure that they are getting the best bang for the buck" with relatively small price differences when buying from the major vendors, according to Partridge.

With the latest announcement, IBM has introduced the 262-MHz RS64-II chip into the S70 line. It replaces a 125-MHz version and comes with 8M bytes of cache space — double the capacity of the previous chip.

Users can upgrade to the new chip for $40,000 for a four-processor board. □

The SAS Data Warehousing Solution

Data Warehousing

Special Section: Data Mining • Decision Support • Strategies

Briefs

[illegible]

Five companies [illegible] blend their tools to [illegible] reporting capabilities of [illegible] warehousing to enterprise [illegible] planning. Each company [illegible] of its tools [illegible] Inc.'s Tapestry [illegible] tool to [illegible] data [illegible] data from [illegible] AG, [illegible] own relational [illegible]

Companies [illegible] Informix [illegible] Informatica, Inc., Micro[illegible], Inc. and Sagent [illegible] Inc.

[illegible]

Information Builders, Inc. introduced SmartBase, meta-data management [illegible] for data warehousing. SmartBase integrates Information Builders' SmartMart tools for building data [illegible] with Microsoft Corp.'s meta-data Repository 2.0. SmartBase was designed to bridge data warehouse management tools with end-user support tools through a centralized repository. SmartBase — which will begin beta testing in October — will include a management engine, a repository driver, an information delivery agent, a business browser for accessing and navigating the repository and an administrative console.

[illegible]

[illegible] 62%

Surviving the data minefield

▸ *Capital One, HP avoid warehousing pitfalls*

By Leslie Goff

NOT ALL NEW technology implementations are a bed of roses

Capital One Financial Corp. was draining its then-parent company, Signet Bank, helping to drive down Signet's stock price from $16 per share to a measly $3 per share. It was 1988, and the credit-card issuer had been struggling with a new technique of identifying the ideal cardholder — one who carried a revolving balance but who paid the monthly minimum on time.

"We were adding new customers that were decreasing the bank's profitability," recalled Jim Donahey, senior vice president and chief information officer at Capital One, based in Richmond, Va., "and all because of this great new tool called data mining."

Just about any team that has ever embarked on a project to turn its corporate data into useful information has found the task more daunting than it ever imagined and has had its fair share of near misses along the way.

Those who overcome the obstacles to achieve success — such as Capital One and Hewlett-Packard Co. — have two things in common: tenacity and a devotion to data integrity.

HP found it had a near catastrophe on its hands when it began to consolidate the data on its 130,000 worldwide employees into a data warehouse for its human resources department.

While the transaction systems in place to manage payroll, employment history and benefits had to remain localized to conform with each region's different regulations, the data warehouse would be organized by global business unit, said Rob Eidson, the Palo Alto, Calif.-based company's human resources reporting manager.

Those who achieve success have two things in common: tenacity and a devotion to data integrity.

But when HP first began to extract employee data from the transaction systems in March 1996, it turned out that the one consistent method it had for tracking employees across all of its various units — the employee identification number — wasn't consistent after all.

"We've had to negotiate the data from all those autonomous

Minefield, page 50

Web access tools help spin-off take off

By Steve Alexander

CONFRONTED WITH starting up and growing a large company very quickly, Sprint PCS, a cellular phone offshoot of Sprint Corp., needed its business managers to have fast access to its four data marts and one data warehouse containing customer data from its parent company.

Traditional data-access tools take too long to implement, so Sprint PCS turned to thin-client tools, which use World Wide Web browsers as the interface.

"Getting people up and running with tools they need is a priority," said Wayne Eckerson, vice president of technology services at Data Warehousing Institute, a for-profit educational group in Gaithersburg, Md. That justified Sprint PCS's use of thin clients, because "one of the big advantages of a tool designed exclusively for the Web is that [the company doesn't] have to deploy software on desktops, which speeds adoption," he said.

The browser-based data access reduced desktop maintenance and training costs and let the company add new users more quickly, said Cloene Goldsborough-Davis, Sprint PCS's vice president of information resources management. With previous client/server tools, "the cost of desktop soft-

Sprint, page 50

COMMENTARY

Getting to know your data

SHAKU ATRE

This is the third in a series on how to build a data warehouse.

UNDERSTANDING the real business-user requirements and creating a flexible database design are the first two steps in creating a data warehouse [CW, June 1 and June 29]. With those in place, the next steps are planning, designing and building a meta-data repository.

Meta data is data about data — and it's a term you hear most often associated with databases and enterprise repositories. Meta data should shield business users from the technical data structures underlying the data warehouse itself.

Business users typically aren't interested in the technical details associated with meta data. They simply want to use it, like a menu, to find the data they need. They expect user-friendly names — in other words, aliases — for the data elements and online analytical processing (OLAP) dimensions they use. They want to know how up-to-date and accurate the data is and how long predefined queries and reports are likely to take.

A data warehouse's meta data typically includes the following:

Getting to know, page 50

Data Warehousing

Special Section: Data Mining • Decision Support • Strategies

Briefs

ERP app integration

Five companies have combined their tools to bring the reporting capabilities of data warehousing to enterprise resource planning applications. Each company has linked some of its tools to D2K, Inc.'s Tapestry data transformation tool to let users populate data warehouses with data from PeopleSoft, Inc., SAP AG, IBM MVS and various relational databases.

Companies partnering with D2K are Influence Software, Infospace, Inc., Micro Strategy, Inc. and Seagate Technology, Inc.

Managing meta data

Information Builders, Inc. has introduced SmartBase, a meta-data management tool for data warehousing. SmartBase integrates Information Builders' SmartMart tools for building data warehouses with Microsoft Corp.'s meta-data Repository 2.0. SmartBase was designed to bridge data warehouse management tools with end-user support tools through a centralized repository. SmartBase — which will begin beta testing in October — will include a management engine, a repository driver, an information delivery agent, a business browser for accessing and navigating the repository and an administrative console.

Top reasons for deploying a Web decision-support system

To provide access to more employees	62%
To reduce software installation costs	59%
To reduce cost of updating software	57%
To maintain applications centrally	44%
To manage data centrally	37%

Base: Survey of 137 Data Warehousing Institute members; multiple responses allowed

Source: Data Warehousing Institute, Gaithersburg, Md.

Surviving the data minefield

▸ Capital One, HP avoid warehousing pitfalls

By Leslie Goff

Capital One's CIO Jim Donahey: "We were adding customers that were decreasing the bank's profitability, all because of data mining"

NOT ALL NEW technology implementations are a bed of roses.

Capital One Financial Corp. was draining its then-parent company, Signet Bank, helping to drive down Signet's stock price from $16 per share to a measly $3 per share. It was 1988, and the credit-card issuer had been struggling with a new technique of identifying the ideal cardholder — one who carried a revolving balance but who paid the monthly minimum on time.

"We were adding new customers that were decreasing the bank's profitability," recalled Jim Donahey, senior vice president and chief information officer at Capital One, based in Richmond, Va., "and all because of this great new tool called data mining."

Just about any team that has ever embarked on a project to turn its corporate data into useful information has found the task more daunting than it ever imagined and has had its fair share of near misses along the way.

Those who overcome the obstacles to achieve success — such as Capital One and Hewlett-Packard Co. — have two things in common: tenacity and a devotion to data integrity.

Those who achieve success have two things in common: tenacity and a devotion to data integrity.

HP found it had a near catastrophe on its hands when it began to consolidate the data on its 130,000 worldwide employees into a data warehouse for its human resources department.

While the transaction systems in place to manage payroll, employment history and benefits had to remain localized to conform with each region's different regulations, the data warehouse would be organized by global business unit, said Rob Eidson, the Palo Alto, Calif.-based company's human resources reporting manager.

But when HP first began to extract employee data from the transaction systems in March 1996, it turned out that the one consistent method it had for tracking employees across all of its various units — the employee identification number — wasn't consistent after all.

"We've had to negotiate the data from all those autonomous

Minefield, page 50

Web access tools help spin-off take off

By Steve Alexander

CONFRONTED WITH starting up and growing a large company very quickly, Sprint PCS, a cellular phone offshoot of Sprint Corp., needed its business managers to have fast access to its four data marts and one data warehouse containing customer data from its parent company.

Traditional data-access tools take too long to implement, so Sprint PCS turned to thin-client tools, which use World Wide Web browsers as the interface.

"Getting people up and running with tools they need is a priority," said Wayne Eckerson, vice president of technology services at Data Warehousing Institute, a for-profit educational group in Gaithersburg, Md. That justified Sprint PCS's use of thin clients, because "one of the big advantages of a tool designed exclusively for the Web is that [the company doesn't] have to deploy software on desktops, which speeds adoption," he said.

The browser-based data access reduced desktop maintenance and training costs and let the company add new users more quickly, said Cloene Goldsborough-Davis, Sprint PCS's vice president of information resources management. With previous client/server tools, "the cost of desktop soft-

Sprint, page 50

COMMENTARY

Getting to know your data

SHAKU ATRE

This is the third in a series on how to build a data warehouse.

UNDERSTANDING the real business-user requirements and creating a flexible database design are the first two steps in creating a data warehouse [CW, June 1 and June 29]. With those in place, the next steps are planning, designing and building a meta-data repository.

Meta data is data about data — and it's a term you hear most often associated with databases and enterprise repositories. Meta data should shield business users from the technical data structures underlying the data warehouse itself.

Business users typically aren't interested in the technical details associated with meta data. They simply want to use it, like a menu, to find the data they need. They expect user-friendly names — in other words, aliases — for the data elements and online analytical processing (OLAP) dimensions they use. They want to know how up-to-date and accurate the data is and how long predefined queries and reports are likely to take.

A data warehouse's meta data typically includes the following:

Getting to know, page 50

Sprint

CONTINUED FROM PAGE 49

ware was a major component of our expenses," she said. She declined to specify the amount saved with thin clients.

The thin client also was a key to adding users. With client/server tools, it took about a week to get a new decision-support user on the system, Goldsborough-Davis said. But with the Web product, it takes only a few minutes to add a user, by giving them a user identification, a password and a uniform resource locator, she said.

Another benefit is the direct-reporting mechanism of thin-client tools. "With the product set we had before, we would have had to send them Excel spreadsheets via E-mail," Goldsborough-Davis said.

"From a finance perspective, the Web pull-type technology helped us greatly," said Jon Zimbeck, Sprint PCS's director of finance. "Prior to that, we were pushing reports to people, and there was contention for system resources."

Before the thin-client installation, it also was difficult to make sure field people all got the same information at the same time, he said.

So far, access via thin client has cut across several key elements of the Sprint PCS business. Four data marts contain information for marketing, finance, enterprise management and technical operations. Beneath the enterprise-management data mart is the data warehouse itself, which aggregates data such as the number of wireless minutes billed, number of handsets sold and revenue by channels of distribution.

Meanwhile, the number of thin-client users is growing rapidly. There are now about 1,000 users out of the company's 7,000 employees. Goldsborough-Davis said she expects that to grow to between 1,200 and 1,500 by next year.

Kansas City, Mo.-based Sprint PCS uses SpaceSQL, a thin client from Infospace, Inc. in San Mateo, Calif., on a four-processor Windows NT 4.0 system that accesses a data warehouse in Dallas.

Goldsborough-Davis said rapid deployment of the Infospace thin-client system — about three months, compared with the nine months required to build a similar system from scratch — already has saved Sprint PCS enough money to pay for software, which Infospace said costs less than $1 million.□

Alexander is a freelance writer in Edina, Minn.

Minefield

CONTINUED FROM PAGE 49

countries and businesses, and working through the organizational structure to get local managers to transmit data the way we need it has been a real challenge," Eidson said.

HP learned early what many companies fail to take into account, said Paula Thornton, an independent data warehousing consultant in Dallas. Data warehouses can't live by operational data alone.

"The way data is organized in the operational world may not work for analysis," she said, "so you have to rethink the whole thing when you move into warehousing because of the way the data are going to be associated and because . . aspects of data change over time."

A project such as Capital One's can go astray, Thornton said, when companies fail to recognize that "the real purpose of data mining is to identify potential hypotheses, which means that you don't come up with answers, you just come up with new questions that make you think of things you might not have thought of before."

Capital One persisted in its efforts to use demographic information previously untested in the credit-card game — such as college education, club memberships and polling statistics — to arrive at lists of customers who would make worthwhile risks. In one year, it blanketed the market with as many as 300,000 test pitches.

"Maybe people who have cats make better credit risks than people who have dogs," Donahey said. "It sounds far-fetched, but we've probably tested it."

After all the testing, Capital One finally struck gold with a demographics combination that worked. It pioneered the low-interest-rate, balance-transfer credit line and reversed Signet's stock plunge.

Today, Capital One has spun off on its own. It serves 13 million customers and is among the top 10 credit-card issuers in the country.□

Goff is a freelance writer in New York.

Getting to know your data

CONTINUED FROM PAGE 49

- Descriptions of source data, often using relational databases' own meta data stored in system catalog tables. Source data may also come from development tools' repositories, file descriptions buried in legacy applications and header information gleaned from external data feeds.
- Information about what's in the database, such as sources, content, accuracy, version and ownership.
- Business rules and filters used to populate the data warehouse.
- The rules and navigation capabilities of the data warehouse and/or multidimensional OLAP data sources.
- The location and rules associated with queries and reports to be run from the data warehouse.

While all that probably sounds terribly logical and straightforward, creating a good central meta-data repository is, in fact, usually the hardest part of building a data warehouse.

That's because some of the first problems you encounter are conflicting naming conventions, incompatible data types — and just plain different definitions for data elements such as "customer" or "account."

To create a successful meta-data repository, I recommend doing the following:

- Pull the business users into the process. Learn their terminology for different data and find out how they will use the data, what questions they have and what problems they are trying to solve. Plan to work across divisions.
- Put all of the meta-data documentation in a standard, structured format, ideally with different views for the casual business user, power user and technical staff.
- Look for a meta-data product that integrates both business meta data and technical meta data. A single meta-data tool will ease meta-data maintenance requirements.
- Develop mechanisms so that business users can maintain the business meta data.
- Don't use programmers or systems analysts to create the meta data. Find people who enjoy doing detailed documentation, such as data administrators, with the help of business departments and business specialists.
- Don't forget to interview database administrators throughout the company. They should know the data better than anyone. And don't overlook other existing sources of meta data.
- Don't forget to include descriptions of the timeliness and level of quality that can be expected from the data.
- Finally, don't forget to track changes in data organization over the history of the data.□

Atre is president of Atre Associates, Inc., a consulting firm in New York that specializes in data warehouse and database technologies. Her E-mail address is shaku@atre.com. You can access her data warehouse methodology at www.atre.com.

Seven steps to a meta-data repository

Building a meta-data repository typically consists of the following seven steps:

1. Determine data sources: Identify the source systems, databases or files and physical data names.

2. Establish data refresh rules: Specify the frequency and timing of data to be extracted from source data. The repository should also contain a log of refresh activities.

3. Transform and filter data sources: Specify transformation logic — including formulas, format conversions, defaults and truncations — applied to the original data sources.

4. Scrub source data: Document the business rules, or the various formal guidelines, that have been established to resolve data inconsistencies.

5. Summarize and aggregate data: Based on anticipated business-user requirements, specify calculations and aggregations to be done in advance. Document aggregation levels, meta-process rules and time domain applied.

6. Design a data-warehouse database: Describe the data-warehouse structures and data elements, and the mappings of the source data, to the data-warehouse data.

7. Design queries and reports: Describe in business terms the predefined queries and reports typically used by the business user. — Shaku Atre

By Steve Alexander

CONTROLLING

TIME: There's never enough of it. Our panel of time-management experts and IS managers suggest 25 ways to take charge of the clock

	 DON WETMORE **President, The Productivity Institute, a time-management consultancy in Shelton, Conn.**	 **PETER McGARAHAN** **Executive director, The Help Desk Institute in San Francisco, and a former senior IS manager at Taco Bell Corp. in Irvine, Calif.**
BEST WAYS TO KEEP A MEETING SHORT	Prepare an agenda with three important features: 1. **A firm start time.** You teach people by what you do rather than what you say; if you hold up a meeting for stragglers, you're teaching them it's OK to come late. 2. **A time limit for agenda items.** Remember, an item tends to expand to the time allocated for it. 3. **A firm ending time.** This tends to force people to better focus on what they have to do and get it over with.	As team manager of the Taco Bell help desk, I was the meeting facilitator. If a topic got off the direction it should go, I'd say, "Let's table it for another time." Or if that was not the place to discuss it, I'd say, "Let's do it one-on-one."
BEST WAYS TO COPE WITH E-MAIL	Consider the following: 1. **Do you really need to see this?** A lot of E-mail is sent to people on a distribution list. See about getting removed from some of those lists. 2. **Have your E-mail screened** by a secretary or clerical person. 3. **If you can't avoid giving out your E-mail address,** have a second, private E-mail address for important mail.	I try to teach people not to send me so many E-mails. When dealing with my E-mail, I believe in the four "Ds" of E-mail responsibility: Do it, delete it, delegate it or defer it.
[illegible]	The way you get quiet time is to schedule it — not only quiet time in the office, but also personal time. Schedule an appointment at the gym, family time, independent reading and so on.	I used to come in at 7 a.m. and have an hour and a half to myself, then stay late three or four times a week from 5 to 7 p.m., or work out at the gym, then come back. The thing I find successful now is carving out a day to work at home about every two weeks.
[illegible]	Ask, "How am I doing?" Many people don't ask that question because they're fearful of getting information they won't like. But inevitably, you're going to find it out, and it's better to ask now and get it up front.	Use randomly chosen focus groups. Or do a check on your user calls to see who's calling the most and find out why.
[illegible]	One of most powerful words in time management is "no." Say you're sorry, "but that's not a priority right now." Or say, "I've got too much on my plate now, but I'll get to you later on." If you never say no, you're always saying yes. When two bosses both want the same chunk of your time, and both are unreasonable, you've got two choices: Make it your problem and squeeze it in, or choose not to make it your problem. Give them each other's phone number, and tell them to work it out.	I'm learning to say n" better than I used to, but I still haven't mastered it. It's a cultural change for people who climbed the corporate ladder because they were doers. But sooner or later, you have to say no.

Alexander is a freelance writer in Edina, Minn.

YOUR TIME

STEPHANIE WINSTON Author of *The Organized Executive* (Warner Books, Inc., New York, 1994)	**CHARLIE MURRAY** Telecommunications director, Travelers Property Casualty Corp. in Hartford, Conn.
In general, call meetings around lunchtime or at the end of the day. It's a way to keep people from going on and on, because they're aware of the time.	Our agenda for staff meetings is broken out by categories, and the time allotted to all of them should equal an hour. A timekeeper — even if unofficial — is necessary.
Do one of four things with E-mail: Throw it away, refer it, act on it or file it. If you don't recognize the name of the sender, and the tag line does not evoke something, you can zap it without reading it.	I look at E-mail first thing in the morning. During the day, if I'm having a casual conversation on the phone, I do E-mail at the same time. Don't do E-mail while you're doing something that involves detail work, but a lot of E-mail is just clarifying a meeting or the status of something.
The real secret is to go someplace else for half an hour or an hour. I know a lawyer who comes up the elevator to his firm every morning, says hi to everyone, then goes down the back elevator and goes to a coffeehouse for an hour with his laptop.	I come in to work at 5 a.m. or before, when there's almost nobody around. If I come in on Sunday, my work limit is one cup of coffee, and when that's done, I have to leave. You have to set limits.
Maybe once every quarter send out a written survey. Or request that five people in the group you're interested in be regular monthly reporters; take them out to lunch once a month as a perk.	I use Lotus Notes and encourage users to access our database where they can read about our projects, orders and customer requests. I also call people. I only have one customer that I personally meet with every couple of weeks or once a month.
Analyze over a period of three to five days what the claims on your time are. Keep a log and look for patterns. Sometimes you can fix things you weren't aware of. For example, claims on your time from your own staff may mean that you're not being clear about their decision-making authority, or maybe your instructions to them weren't clear. Maybe you're taking on too much responsibility; you always can delegate.	Try to squeeze it in. That usually works. If somebody leaves me a message, I figure I might as well have the meeting right now; it won't do any good to put it off, and I'd rather get it over with.

E-mail as a time-saver

To some, E-mail is a time-waster. By learning when and when not to use E-mail, Stephanie Reel has made it a time-management device.

As vice president of information services at Johns Hopkins Medicine, the Baltimore health care organization affiliated with the university, Reel says she finds E-mail a faster way to stay in touch than the telephone or regular mail. She uses E-mail to keep her customers and bosses informed and to solicit input and feedback.

"But she sends what's appropriate. She doesn't copy us on everything," says Steven Mandell, director of clinical information systems, who reports directly to Reel.

E-mail helps Reel monitor the status of major projects. "I expect the project leader to send me a sentence or two by E-mail every couple of days on how things are progressing. That way I don't need to go bug him or her for an update," she says.

Reel has a reputation for prompt responses. "I get an answer back the same day," says John Moletta, a network operations supervisor three levels below Reel. The faster he gets responses, the more rapidly he can act on them.

Reel also gets to know others' E-mail habits. "I know which ones I can send a quick message to and get a quick response. Others, I would not dream of sending E-mail to. I also won't rely on E-mail if I think the other person has something to say that he or she doesn't want to put in writing."

Reel uses E-mail to help manage her own time. "If I want to be reminded of something, I send myself an E-mail — I can send it to arrive in a day or a week or a month or a year."

She's also found that wise use of E-mail can help make meetings shorter. "I might have a discussion by E-mail before I get to a real meeting, just to make sure everyone knows the topic, has the agenda and knows what the expectations are."

— Steve Alexander

Stephanie [illegible]

CHRIS HARTLOVE

JIM CHAMPY

GOODBYE, INFO AGE; HELLO, AGE OF LOGISTICS

It's time to declare finis to the Information Age. In fact, it may never have existed. What we're really experiencing is the Age of Logistics — a time when we're learning to move everything — products, services and money — faster and faster. Information technology is a facilitator of all that, but it isn't the only driver of business change.

A linguistic sleight of hand, you say? Not really. In fact, our hubris and phobias about IT may have prevented companies from seeing their real job: changing how the company adapts to the new logistics infrastructure being built.

For example, *The New York Times* just ran a piece called "Is This the Factory of the Future?" It was about Ingram Micro, the big distributor of PCs that recently converted a warehouse into a manufacturing line. From standard parts, it builds and then ships PCa for archrivals IBM, Compaq, Hewlett-Packard, Apple and Acer.

One IBM executive was quoted as saying Ingram's logistics were speeding the distribution of IBM'a intellectual capital, not just physical boxes.

The infrastructure domain used to belong to government. It built roads, bridges, seaports and airports. It built a national banking system and a maze of regulations. It did pretty much the same for communications, including the nomenclature for the Web. We still need all of that. But the private sector is building tomorrow'a business infrastructures.

Take the remarkable success of United Parcel Service of America. The job of that $28 billion logistics behemoth is to move products among businesses and between businesses and consumers. Its CEO, James P. Kelly, recently declared that UPS'a brown trucks are becoming the rolling physical warehouses of American industry.

But that "warehouse" is dynamic: It gets products to destinations when they're needed. For those who want instantaneous access, the end state could lead to an updated version of the line from *Star Trek*: "Beam me up a new PC, Scottie."

As for the logistics of money, look at banks such as Boston-based State Street Corp. It isn't just a bank. Its competency ia moving, holding and managing money and securities around the globe. Its ambition is to do that in ever less time.

BACKING FOR BANKING

The banking customer of the future will expect instantaneous transactions, independent of geography and currency. Envision a financial infrastructure in which myriad financial instruments in varying currencies move easily through the vapor. The euro currency accelerates the trend, and as Europe develops an appetite for U.S.-style securities markets — one marked by high volume and frenetic trading — there will be a need for much more robust trading systems.

That isn't to overlook information and communications companies such as AOL, Microsoft and AT&T. They're rushing to build networks that move pure data as well as support the movement of products and money.

All of these nascent infrastructure efforts require big businesses to build. Maybe there's even an umbrella service to link them: Call it a universal services company. It would handle all infrastructure services electronically by way of a service center that consumers would call to change a telephone listing, pay a utility bill, aubscribe to a magazine, settle a health care claim — even open a 401(k) plan.

LORDS OF LOGISTICS?

Such a ubiquitous infraatructure company isn't science fiction. It will happen for those who believe that this, indeed, is the Age of Logistics.

What does this all mean? Probably that we're at the next frontier in productivity. Re-engineering has been mostly about breakthroughs in getting the right stuff out the door. But there are huge productivity gains left in processes that link companies to their suppliers and customers.

It goes well beyond the outsourcing of a single function, and it will be driven by the need to deliver a higher level of customer service than a single company can.

To make all this work, a company's technology architecture now will have to encompass what's external as well as internal to its operations. IT must be driven from a point of view that considers how everything in the future — products, services, money and information — will move.

The Age of Logistics is more than a change in terminology. It'a a new state of mind. ☐

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. His Internet address is JimChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.

RESOURCES: EXECUTIVE BOOKSHELF

to Lead
Charge
Roger Fisher and Alan Sharp
John Richardson
HarperBusiness; 304 pages; $23 (hardcover)

Roger Fisher and Alan Sharp's book sometimes threatens to drown in the nitty-gritty of day-to-day corporate life. The book focuses on how to achieve collaboration to reach high-quality results. That'a a critical topic for information technology, whose job is to build systems through close collaboration among systems professionals, business users and (usually) contractors, consultants and vendors.

Most of us have sat in meandering meetings wondering if we should tune out and wait for the agony to be over — or seize control and get something done. Fisher and Sharp recommend taking a leadership role, not in a typical hierarchical fashion, but rather by demonstrating "lateral leadership" — the leadership of influence.

The authors offer the following steps for demonstrating lateral leadership:

1. *Build personal skills.*
2. *Clarify vision and goals.*
3. *Learn how to stimulate good conduct in others.*

Fisher and Sharp give most of their attention to building personal skills. They devote individual chapters to defining purpose, thinking, learning, engaging and providing effective feedback.

The book offers many brief conversational snippets of interaction, but relatively few about really tricky situations — such as dealing with an unreasonable boss.

The book'a thesis hinges largely on the authors' belief that people can develop the ability to think systematically. I'm more of the school that says you develop such a skill early on — or never. Still, there'a enough good advice here to apply in everyday life. IT managers — who often see themselves as outranked and outgunned by their colleagues — could use the book to better influence decision-making.

Today, leadership may be less about what the business card says and more about who takes the lead in getting things done.

— *Leilani Allen*

Allen is a partner at Summer Point Consulting in Mundelein, Ill. She can be reached at leilani@flash.net.

Connect with technology.

Connect with innovation

Connect with growth

Connect with the best

Connect With The Best.

Everyone needs talented IT professionals. But what about your needs? Opportunity. Technology. Freedom. Your career needs will be met at Sprint PCS. We're America's only 100% digital, 100% PCS wireless network and we've created a company that values and rewards innovative minds. To build a career with the team that's redefining communication, think Sprint PCS. We have excellent opportunities in Kansas City, Missouri for:

Data Architect

Ensures that Sprint PCS systems are designed and configured to optimally support the company's information systems. Requires 7+ years systems experience in data planning, analysis, design and implementation. Must have demonstrated knowledge of sophisticated, complex data technology solutions, industry standards and data management methodologies. Skills required include data requirements gathering, logical data modeling, use of CASE tools for data modeling, packaged application data structure analysis, and reverse engineering. **Job Code: CW/DA**

Database Administrator

Ensures Sprint PCS Database Management Systems (DBMS) are selected and configured to optimally support the company's DBMS-based information systems. Qualified candidates will have a minimum of 5-7 years information systems experience in database planning, analysis, design, implementation and production support. Oracle experience required. **Job Code: CW/DBA**

DB2 Database Administrator

Ensures Sprint PCS Database Management Systems (DBMS) are selected and configured to optimally support the company's DBMS-based information systems. Qualified candidates will have a minimum of 7+ years information systems experience in database planning, analysis, design, implementation and production support, as well as 3+ years of VLDB experience on parallel IBM SP2 platform utilizing UDB and/or DB/2 DBMS. Telecom experience a plus. **Job Code: CW/DB2DA**

Senior "C" Programmer

Defines system scope and objectives, preparing detailed specifications that encompass business processes, information flow, risk analysis, timelines, cost/benefit analysis, probable platforms and impact analysis. Responsibilities include analysis of interfaces, and how to remove interfaces by utilizing data layers. Must have in-depth knowledge of business processes. Qualified candidates will have 5-7+ years experience, with a strong telecommunications background, computer application development, process knowledge and formal SDLC methodology (such as Method/I) expertise. Bachelor's degree preferred. **Job Code: CW/SPC**

Technologist

Primarily responsible for developing the short-term and long-term strategic plans for the evolution of information technologies within Sprint PCS as well as developing the solution-set technology components of the IT architecture. You will work within cross-functional teams of internal and external IT professionals requiring excellent interpersonal and presentation skills as well as the ability to communicate complex technical data and concept using standard business terminology. A high energy level, practical experience, creativity and the ability to grasp new concepts quickly are all essential to holding this position. Must have information systems knowledge which covers the spectrum of mainframes, client/server, Unix systems, data, voice, video and satellite networks. Bachelor's degree required as well as working IT experience in an operating environment; MBA a plus. **Job Code: CW/TECH**

System Administrators - Unix
Sr. Systems Administrator - Unix

Performs activities to maintain, configure, and support the corporate business and telco switch systems as required to perform upgrades to the operating systems, databases, and third-party applications. Develops work plans for migrations and upgrades; and, shares responsibilities for all production, development, and systems supporting telco switches. Works closely with team members to perform component, operating system, file system and other configuration enhancements to optimize the corporate production systems. Technical degree and a minimum of 3 years experience in systems administration. Ability to use the system account report (SAR/SAM), and to author shell scripts required. **Job Code: CW/SSA-U**

Platform Engineer

Responsible for determining platform operation requirements, assisting in projecting platform portion of network traffic, and addressing specific platform related issues. Will translate user system needs into specific platform configurations based on requirements, network impact and budget constraints. Knowledge in design engineering, hardware/software implementation process and strategic and tactical technology development direction required. **Job Code: CW/PE**

Technical Architect

Provide technical leadership and guidance in the determination of technologies, interfaces, and vendors during the design and development of Sprint PCS business systems solutions. Responsible for project adherence to enterprise standards, scalability, flexibility, and visionary completeness of system solutions. A degree in computer science, engineering, or information systems is desirable, as well as experience in telecommunications. **Job Code: CW/TA**

Sr. Technologist - PeopleSoft

Primarily responsible for developing the solution-set technology components of the IT architecture; defining scope of the evolution of the application architecture and standards, determining working policies for PeopleSoft solutions/initiatives, serving as advisor to IT management on architecture and standards. You will work within cross-functional teams of internal and external IT professionals requiring excellent interpersonal and presentation skills as well as the ability to communicate complex technical data and concept using standard business terminology. A high energy level, practical experience, creativity and the ability to grasp new concepts quickly are all essential to holding this position. Must have information systems knowledge which covers PeopleTools I, II. PeopleCode; SQR, SQL, Oracle DB, and at least four of the following modules - AR, AP, GL, PC, PR. Other skills preferred: C/C++, Unix and Unix scripting, NT, WIN95, MS Office, LAN, e-mail. Bachelor's degree required as well as working IT experience in an operating environment; MBA a plus. **Job Code: CW/SRTECH-PS**

Systems Analyst - Sr. Systems Analyst

Serves within the systems development group, working closely with assigned systems analysts, client functional groups and business teams to define work processes and develop IT solutions. Unix, C, SQL, PeopleSoft, and/or Oracle Developer 2000 desired. **Job Code: CW/SA-SSA**

Business Analyst - Sr. Business Analyst

Serves within the business analysis group, assigned business analysts, client functional groups and technical teams to define work processes and develop IT solutions. Requires computer application development process knowledge and relevant experience using a formal SDLC methodology (such as Method/I). **Job Code: CW/BA-SBA**

Network Systems Engineers - Sr. Network Systems Engineers

Responsible for procurement and delivery of Network Administrative Systems Planning; design, development and implementation of SCP AIN services; WAIN Planning; design, development of specifications for SCP and SMS based applications to include HLR, AC and OTAF Planning, design, development for voice mail system, wireless data and messaging applications. Knowledge required with IS-41, INC, MSC, Systems Engineering, Provisioning Architecture, Local Number Portability, Cellular Digital Pack Data and Cellular Circuit Switched Data. 3-10+ years experience in system analyses, design, development, program management, telecommunications, AIN or WIN systems, SS7 messaging, IS-41, CDPD, Circuit Switched Data and other Data Protocols. 3-5+ years with MSC call processing logic. BSCS or BSEE required; MSCS or MSEE with emphasis in telecommunications system experience and/or management desirable. **Job Code: CW/NSE/SNSE/SBP**

Manager - Application Delivery

Responsible for managing ongoing development of application systems within various areas of SPCS. Requires 8-10 years IT experience in a client server environment with a minimum 3-5 years in a managing capacity. Must have a strong working knowledge of application systems software development-integration life-cycle methodology and familiarity with business processes. A four year degree or equivalent work experience is also required. MBA or equivalent is preferred. **Job Code: CW/MAD**

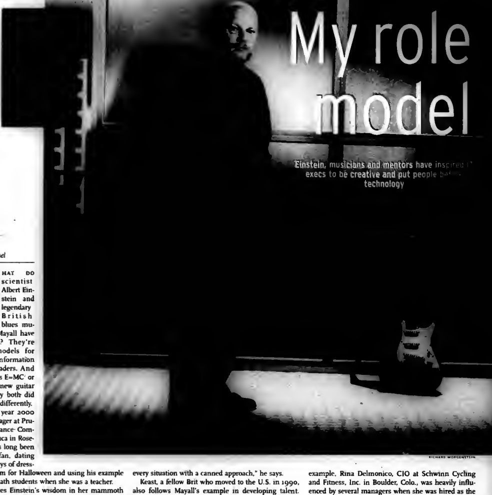
If your career goals include growth, excitement, and developing/working with the next generation of technology, then Sprint PCS invites you to shape the future with us. We offer an outstanding compensation and benefits package. Interested candidates should send their resumes, including cover letter and salary history, to: **Sprint PCS, Mailstop KSOPKH0101, Dept. ITMCWB4 (Dept. code must be included for resume processing), 4370 W. 109th Street, Overland Park, KS 66211; FAX (toll-free): 1-888-485-2240; e-mail: pcs300@sprintspectrum.com. Please also specify a job code from above positions when sending your resume.** We are proud to be an EEO/AA employer M/F/D/V. Also, we maintain a drug-free workplace and perform pre-employment substance abuse testing.

Sprint. **Sprint PCS℠**

The Clear Alternative to Cellular℠

My role model

Einstein, musicians and mentors have inspired IT execs to be creative and put people before technology



RICHARD MORGENSTEIN

By David Ramel

WHAT DO scientist Albert Einstein and legendary British blues musician John Mayall have in common? They're both role models for successful information technology leaders. And whether it was $E=MC^2$ or a screaming new guitar riff in F, they both did things a little differently.

Irene Dec, year 2000 program manager at Prudential Insurance Company of America in Roseland, N.J., has long been an Einstein fan, dating back to her days of dressing up like him for Halloween and using his example to motivate math students when she was a teacher.

Dec still uses Einstein's wisdom in her mammoth project of preparing Prudential for 2000. She often uses his quote, "In the middle of difficulty lies opportunity," in her year 2000 presentations. She says that although Prudential's goal is to reach compliance, "We have taken it as an opportunity" to improve in other areas, such as the company's commitment to processes and methodology. "If you are faced with a difficult event, whether as an individual or company, you really should look at it as an opportunity," Dec says.

For John Keast, chief information officer at PG&E Corp. in San Francisco, such out-of-the-box thinking is inspired by blues musician Mayall. Keast says Mayall has "a unique style, a unique presence in the market" and a taste for experimentation that "characterizes a new way of thinking about problems."

Keast says Mayall has produced about 60 albums, but very few with the same core band. He tries new musician combinations and techniques — even to the point of releasing one experimental blues album without percussion. "You have gotta sort of be out there and try new things," Keast says. He too carries his role model's inspiration into his own work. "Technology is changing. The market is changing. You can't go into every situation with a canned approach," he says.

Keast, a fellow Brit who moved to the U.S. in 1990, also follows Mayall's example in developing talent. Mayall, he says, is famous for developing musicians such as Eric Clapton, using them in his band before they move on and become famous in their own right. Keast says he also finds pride in bringing someone into his IT team, helping him develop his skills and talents and watching him move on to a better position.

Susan Vik, director of IT services at Harvard Law School in Cambridge, Mass., says she also values the career development of her staff. She credits that to Doris Russell, a manager who hired Vik at Arbitron Ratings Co. in New York in the mid-1980s. Vik says her mentor had many fine qualities, but what really stood out was "her heartfelt credo that no matter how technical whatever it is you are working on, you put people first." Vik says she has tried to follow that credo, and when she hasn't, "I've been sorry."

Vik says "when push came to shove, Russell would be the first person working through the night" on a difficult project. But she would always make sure employees with child-care responsibilities left early to take care of their children and not feel guilty about it.

The emphasis on people instead of technology is a common characteristic of IT leaders' role models. For example, Rina Delmonico, CIO at Schwinn Cycling and Fitness, Inc. in Boulder, Colo., was heavily influenced by several managers when she was hired as the youngest (and first female) vice president in distribution services at Citibank Mastercard and Visa services about 15 years ago. She says she was most impressed by their focus on the personal, human aspect of things. "That's probably because that's how I am," she says.

"Technology is wonderful, but I think that you have to balance technology and people," Delmonico says. "If you don't use technology with wisdom of people, you can let it rule you, and it becomes the center, when people are really the center."

Robert Adams, president of management consultancy AIMM, Inc. in Winter Park, Fla., believes role models are important for IT managers. "Role models are helpful in that they provide less-experienced managers with opportunities for observation, practice and feedback, which are absolutely crucial for successful development." He agrees that they are also important in demonstrating the importance of people skills.

Or, as Delmonico says, "One of my bosses said that people do things for you because they like you — and that's OK."□

Ramel is Computerworld*'s senior copy editor.*

My role model

By David Ramel

WHAT DO scientist Albert Einstein and legendary British blues musician John Mayall have in common? They're both role models for successful information technology leaders. And whether it was $E=MC^2$ or a screaming new guitar riff in F, they both did things a little differently.

Irene Dec, year 2000 program manager at Prudential Insurance Company of America in Roseland, N.J., has long been an Einstein fan, dating back to her days of dressing up like him for Halloween and using his example to motivate math students when she was a teacher.

Dec still uses Einstein's wisdom in her mammoth project of preparing Prudential for 2000. She often uses his quote, "In the middle of difficulty lies opportunity," in her year 2000 presentations. She says that although Prudential's goal is to reach compliance, "We have taken it as an opportunity" to improve in other areas, such as the company's commitment to processes and methodology. "If you are faced with a difficult event, whether as an individual or company, you really should look at it as an opportunity," Dec says.

For John Keast, chief information officer at PG&E Corp. in San Francisco, such out-of-the-box thinking is inspired by blues musician Mayall. Keast says Mayall has "a unique style, a unique presence in the market" and a taste for experimentation that "characterizes a new way of thinking about problems."

Keast says Mayall has produced about 60 albums, but very few with the same core band. He tries new musician combinations and techniques — even to the point of releasing one experimental blues album without percussion. "You have gotta sort of be out there and try new things," Keast says. He too carries his role model's inspiration into his own work. "Technology is changing. The market is changing. You can't go into every situation with a canned approach," he says.

Keast, a fellow Brit who moved to the U.S. in 1990, also follows Mayall's example in developing talent. Mayall, he says, is famous for developing musicians such as Eric Clapton, using them in his band before they move on and become famous in their own right. Keast says he also finds pride in bringing someone into his IT team, helping him develop his skills and talents and watching him move on to a better position.

Susan Vik, director of IT services at Harvard Law School in Cambridge, Mass., says she also values the career development of her staff. She credits that to Doris Russell, a manager who hired Vik at Arbitron Ratings Co. in New York in the mid-1980s. Vik says her mentor had many fine qualities, but what really stood out was "her heartfelt credo that no matter how technical whatever it is you are working on, you put people first." Vik says she has tried to follow that credo, and when she hasn't, "I've been sorry."

Vik says "when push came to shove, Russell would be the first person working through the night" on a difficult project. But she would always make sure employees with child-care responsibilities left early to take care of their children and not feel guilty about it.

The emphasis on people instead of technology is a common characteristic of IT leaders' role models. For example, Rina Delmonico, CIO at Schwinn Cycling and Fitness, Inc. in Boulder, Colo., was heavily influenced by several managers when she was hired as the youngest (and first female) vice president in distribution services at Citibank Mastercard and Visa services about 15 years ago. She says she was most impressed by their focus on the personal, human aspect of things. "That's probably because that's how I am," she says.

"Technology is wonderful, but I think that you have to balance technology and people," Delmonico says. "If you don't use technology with wisdom of people, you can let it rule you, and it becomes the center, when people are really the center."

Robert Adams, president of management consultancy AIMM, Inc. in Winter Park, Fla., believes role models are important for IT managers. "Role models are helpful in that they provide less-experienced managers with opportunities for observation, practice and feedback, which are absolutely crucial for successful development." He agrees that they are also important in demonstrating the importance of people skills.

Or, as Delmonico says, "One of my bosses said that people do things for you because they like you — and that's OK." □

Ramel is Computerworld*'s senior copy editor.*

FREE

DR JAMES MARTIN

In Depth

Put down the dust mop, and let's sell cee-ment cyberspace

By Leslie Goff

GEORGE AND SHIRLEY Kalvinsky's cigar shop is nestled in a small tourist town on the Delaware coast. During the peak summer months, they re[illegible]e familiar faces from up and down the Eastern Seaboard who make Greybeard's Tobacco and Coffee a regular part of their summer vacation.

Come September, when the summer residents leave, business slows. The Kalvinskys usually close their extra storefront near the beach and settle into a quieter routine at the main store.

This year, all that will change. The Kalvinskys have opened a new location that their loyal customers can visit anytime to pick up their favorite hard-to-find cigars. And new customers who've never heard of Rehoboth Beach, Del., can surf by and check out the merchandise. Yes, Greybeard's has set up shop in cyberspace.

While Greybeard's already serviced a modest number of summer customers year-round via mail order, its long-distance business has doubled to about 8% of the store's $700,000 in annual revenue since launching its Web site (*www.greybeards.com*) in January, says George Kalvinsky. Moreover, the Web site has generated more walk-in traffic for the store this season — people who said they'd been summering in Rehoboth Beach for years but never knew about the store until they saw it on the Web.

The Kalvinskys' Web site illustrates how mom-and-pop shops are boasting the appearance of big businesses on the Web and transcending borders to reach far-flung customers. A depth of selection of merchandise, detailed product information written with flair and professional, high-quality graphics can all work together to make even the most humble enterprise look like a big-time operation.

Mom-and-pop businesses have learned that on the Web, anybody can look like a conglomerate

DOWN-HOME APPEAL

The Great Southern Sauce Co., a cozy storefront in the heart of Little Rock, Ark., has sold salsa, barbecue sauce and other favorites from south of the Mason-Dixon Line to customers as far away as London and Saudi Arabia. While the site (*www.greatsauce.com*) has down-home appeal, with recipes and folksy product descriptions, the sheer number of sauces available makes visitors think the company is a huge mail-order business, according to owners Amy and Andrew Moore.

Likewise, most online shoppers would be surprised to learn that College Depot (*www.collegedepot.com*), an electronic-commerce operation that sells college-type merchandise — from hemp bracelets to inflatable dorm-room furniture — is based in Donal and Bridget Gleeson's family home in Trumbull, Conn. The Web site, which boasts 50,000 products, weekly merchandise giveaways and secure online ordering, fosters the notion of a huge retail operation.

"We try to convey the image that we're substantial because we think that helps to build trust," says Donal Gleeson. He landed on the idea of a retail site for students after researching underserved market niches and has established alliances with trading partners that ship their merchandise directly to customers. The site was launched last October and in its first academic year did less than $100,000, with about 1,000 orders. Gleeson is optimistic. "We expect it to be much bigger this year," he says.

About one quarter of small businesses in the U.S. have a Web site, according to a recent survey of 1,000 companies with fewer than 100 employees by Yankelovich Partners, Inc. for IBM and the U.S. Chamber of Commerce. Of those, 29% use their sites to receive orders. Interestingly, only 46% said their sites are worth the time and effort put into them.

The Kalvinskys, Moores, Gleesons and other entrepreneurial families are among those who believe they can reap their share of the expected electronic-commerce harvest: a projected $5.8 billion this year, $9.9 billion next year and $15.6 billion in 2000, according to New York-based research firm Jupiter Communications, Inc. And that's in U.S. sales alone.

"This Internet is great. I could live on the North Pole and sell bikinis and do a booming business," says Scott Girner, owner of Aloha Pools and Spas in North Little Rock, Ark. The 20-year-old family business launched its Web site (*www.alohapools.com*) last spring and got 12,000 hits in its first three months. That generated $100,000 in business — 3% of Aloha's usual annual revenue — all of it from outside the state. Who knew, in the vernacular of *The Beverly Hillbillies*, you could sell cement ponds over the Web? Girner started out a doubting Thomas; now he's a true believer. "I've yet to get any orders from the moon or Mars, but I've gotten them from everywhere else," he says.

THEY'VE GOT PERSONALITY

More than just selling merchandise, small-business sites sell their business. They create an image, promote a lifestyle and make a connection between entrepreneur and customer. Like the classic general store, mom-

Granny, ponds in

and-pop shops on the Web invite shoppers to come on in and stay a while. What's more, they can teach the big boys a few things about what works in online commerce.

"They have a lot of personality; they let customers know there is someone out there who cares about the products," says Ken Allard, an analyst at Jupiter Communications. "You can see the pride vs. a large company's Web site, where everything is generic and the pride doesn't come through."

Small companies on the Web usually take a greater interest in checking their E-mail — and are frequently more responsive to customer requests than megacorporations, according to Minda Caesar, marketing manager for IBM's Home Page Creator, a do-it-yourself Web site publishing package aimed at small business.

E-MAIL RELATIONSHIPS

In fact, among small businesses with Internet access, E-mail is the most common application, according to the IBM/Chamber of Commerce survey. About half of respondents said they use the 'net to glean information about potential customers. Relationship-building, more than actual sales, may prove to be the real breakthrough for mom-and-pop shops on the Web.

"It's a tricky route sometimes," says Gleeson of that relationship. "We want to be appealing enough for students to view the merchandise but not off-putting for the parents who pay the bills." For instance, Gleeson is reworking the name of a gift basket meant for students to send parents that he had called the Adult Care Package. "Some people said it seemed to imply that it was of an adult nature in another sense of the word," he says.

Responding to E-mail has generated more business than online ordering capabilities for Greybeard's and The Great Southern Sauce Co. Kalvinsky says he gets 15 to 20 online orders per week — but 30 to 40 E-mail messages. The Moores maintain regular E-mail correspondence with site visitors, including a regular customer in New Jersey who has inquired about the possibility of opening an East Coast franchise — a direction The Great Southern Sauce Co. is eager to pursue.

The Moores acquired the 6-year-old business in May from its original owner, who put the store online in 1996 but spent very little energy updating it. Despite the neglect, the site continues to draw about 80 catalog requests and 20 orders a month. The Moores say they plan to make the Web a critical part of their expansion strategy. Eventually, they hope to see online sales account for 50% of their total revenue, which now averages $350,000 to $450,000 a year. Although they haven't tracked what percentage of revenue comes from Web-related sales, they say 70% of customers who receive a catalog place an order. "We were amazed to see the activity on the site — [the previous owner] was reaping benefits with no work at all," Amy Moore says. "But we think it can take the business to a whole new level." □

Goff is a freelance writer in New York.

Granny, ponds in

and-pop shops on the Web invite shoppers to come on in and stay a while. What's more, they can teach the big boys a few things about what works in online commerce.

"They have a lot of personality; they let customers know there is someone out there who cares about the products," says Ken Allard, an analyst at Jupiter Communications. "You can see the pride vs. a large company's Web site, where everything is generic and the pride doesn't come through."

Small companies on the Web usually take a greater interest in checking their E-mail — and are frequently more responsive to customer requests than megacorporations, according to Minda Caesar, marketing manager for IBM's Home Page Creator, a do-it-yourself Web site publishing package aimed at small business.

E-MAIL RELATIONSHIPS

In fact, among small businesses with Internet access, E-mail is the most common application, according to the IBM/Chamber of Commerce survey. About half of respondents said they use the 'net to glean information about potential customers. Relationship-building, more than actual sales, may prove to be the real breakthrough for mom-and-pop shops on the Web.

"It's a tricky route sometimes," says Gleeson of that relationship. "We want to be appealing enough for students to view the merchandise but not off-putting for the parents who pay the bills." For instance, Gleeson is reworking the name of a gift basket meant for students to send parents that he had called the Adult Care Package. "Some people said it seemed to imply that it was of an adult nature in another sense of the word," he says.

Responding to E-mail has generated more business than online ordering capabilities for Greybeard's and The Great Southern Sauce Co. Kalvinsky says he gets 15 to 20 online orders per week — but 30 to 40 E-mail messages. The Moores maintain regular E-mail correspondence with site visitors, including a regular customer in New Jersey who has inquired about the possibility of opening an East Coast franchise — a direction The Great Southern Sauce Co. is eager to pursue.

The Moores acquired the 6-year-old business in May from its original owner, who put the store online in 1996 but spent very little energy updating it. Despite the neglect, the site continues to draw about 80 catalog requests and 20 orders a month. The Moores say they plan to make the Web a critical part of their expansion strategy. Eventually, they hope to see online sales account for 50% of their total revenue, which now averages $350,000 to $450,000 a year. Although they haven't tracked what percentage of revenue comes from Web-related sales, they say 70% of customers who receive a catalog place an order. "We were amazed to see the activity on the site — [the previous owner] was reaping benefits with no work at all," Amy Moore says. "But we think it can take the business to a whole new level." □

Goff is a freelance writer in New York.

And in
this corne
COMDEX
technology'
main eve

Oh, Canada!

By Alice LaPlante

U.S. IT managers make a run for the border to find scarce IT talent

When Bruce Benda completed his bachelor's degree in computer science at the University of British Columbia in Vancouver, he was eager to jump into the IT workforce. But the only job Benda could find in his field paid a measly $8.50 per hour (and those were Canadian dollars) testing computer games. So he set his sights elsewhere.

To the U.S., to be precise. He's now a systems administrator at Mpath Interactive, a Mountain View, Calif.-based online gaming company.

He's very happy. Silicon Valley is the place to be. Benda not only has a job — he also has a promising career in the hottest technology market in the world. And the financial rewards are so much more lucrative that Benda just returned from treating his family to a Hawaiian vacation.

Benda isn't alone in making this transcontinental jump. As shortages of U.S. technologists become increasingly acute, "American employers are naturally turning toward Canada as a source of skilled workers," says Joseph C. Grasmick, a Buffalo, N.Y.-based immigration attorney who specializes in helping U.S. information technology organizations locate and hire Canadian technical workers. "And Canadians are crossing the border to take advantage of the demand," says Grasmick, who also sponsors a World Wide Web site devoted to Canadian/U.S. immigration issues (*www.grasmick.com*).

"Canada has an excellent pool of educated workers," says Leo Ducharme, IT manager at Klockner Namasco Corp., a Germany-based steel manufacturer with offices in Atlanta. A Canadian native, Ducharme was transferred to Namasco's U.S. operations 15 years ago, first to the corporate office in Michigan only an hour away from his native Windsor, Ontario, and then finally to Atlanta.

For Canadians, the advantages of looking in a southernly direction are clear, Ducharme says. "The opportunities in the States are so much better, and the taxes are lower."

And the legalities are a breeze. Unlike foreign nationals from most other countries, Canadian workers don't need to go through the arduous H1-B visa process. Since the North American Free Trade (NAFTA) agreement was signed, any Canadian can work in the U.S. under a TN-1 visa, which requires presenting only an "offer letter" from any employer to the U.S. Immigration and Naturalization Service.

"They're the closest thing to a U.S. citizen," declares Heinz Bartesch, director of technical search at the Professional Consulting Network, Inc. in San Francisco. Bartesch has placed

Oh, Canada, page 63

Another Deloitte Consulting Difference

DELOITTE CONSULTING:
Or you can shape it.

The typical consulting firm confines itself to solving today's problems for its clients. Deloitte Consulting/ICS consultants take a very different approach. We help clients develop the skills they need to address challenges today — and to manage the future.

Achieving these kinds of results demands a more flexible, collaborative approach. It also requires people who are committed to keeping Deloitte Consulting what *Computerworld* calls the most "user-friendly" of all consulting firms.

If you believe that being easy to work with is consistent with being a fierce competitor, we should talk. Whether you're just starting out in consulting or are a professional experienced in SAP® or Baan implementation, your next job can be a stepping stone — or a major career move. At Deloitte Consulting/ICS, the shape of the future really is up to you.

To discuss opportunities, call 1-800-364-0693
or visit our web site at www.deloitte-ics.com

A very different approach. For very different results.

Deloitte & Touche Consulting Group

ICS

Programmer Analyst (IBM Mainframe): Structured systems analysis, design, development, testing, quality assurance, implementation, integration, maintenance, support & conversion of large volume online transaction processing & batch application systems in a multi-h'ware/multi-s'ware environ. over centralized database systems using relational/hierarchical/network database mgmt systems, Third Generation Languages (3GLs), Fourth Generation Languages (4GLs), CASE tools & Transaction Processing Software. Reqs: B.S. in Comp. Sci., Math, Eng'g or Sci., business-commerce (or equiv.) & 1 yr exp in job offered or as Software Engineer/Systems Analyst. Must have appropriate combination of skills as follows: 1 of A & 1 of B & 1 of C; or 1 of A & 2 of B; or 1 of A & 2 of C: A includes DBMS: DB2, IMS DB, IDMS DB; B includes Tools: CICS, IMS DC, IDMS DC, ADS/O, QMF, VSAM, IEF-Workbench; C includes Languages/CASE tools: TELON, IEF, ADW, CSP, APS. High mobility preferred. (Multiple positions) 40 hrs/wk; $55,[illegible] - $65,[illegible]/yr. Report/Submit resume to Joan Long, Pittsburgh West Job Ctr, [illegible] Bilmar Dr., Pittsburgh, PA 15205. JO #[illegible].

Information Systems Senior Associate needed for Cincinnati area company. Duties include: Planning, monitoring and executing the efficient design and implementation of interface conversion programs and modifications to the Systems, Applications, and Products (SAP) in Data Processing in R/2 and R/3 in the modules of SD (Sales and Distributions), MM (Materials Management), SM (Service Management) and FI/CO (Finance and Accounting). Develop solutions, applications and configurations for conversion programs, provide testing and documentation. Supervise technical installation of the SAP system within the framework of projects or departments maintaining existing SAP software systems. Job requirements: Bachelor Degree or equivalent* with major field of study in Business Administration or Computer Science, minimum 2 years experience in job described or 2 years experience as Computer Programmer** (*Equivalent may be Foreign Credential Evaluation in lieu of degree.) (**Experience must be in SAP) 40 hours/week, Monday through Friday, 8:30am to 5:00pm; $75,000/year. Send resumes and cover letters (no calls) to: [illegible], REF# [illegible], Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216. EOE

DATABASE ADMINISTRATOR

Database Administrator to do logical and physical design of Oracle database. Code test and implement Oracle scripts applying knowledge of Database Management Systems; Calculate optimum values for Oracle database parameters; performance tune Oracle databases; Model Oracle database security; manage backup and recovery of Oracle databases, make changes to Oracle database applications using expertise in Oracle database administration which includes logical design, physical design, performance tuning, backup and recovery, coding of scripts, knowledge of Oracle 7.3, SQL *DBA, Pro *C (tools) and PL/SQL (Language). Requirements: Bachelor's Degree in Computer Science or related field and five years experience as a database administrator or a Masters Degree in Computer Science or related field and two years experience as a database administrator, expertise in Oracle database administration which includes logical design, physical design, performance tuning, backup and recovery, coding of scripts, knowledge of Oracle 7.3, SQL *DBA, Pro *C (tools) and PL/SQL (Language). Salary: $65,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and relocation. Apply: Mr. Tom [illegible], Indiana Job Center, 380 North Fourth Street, Indiana, PA 15701, Job No. [illegible].

Software engineer with 2 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 2 years of experience using Cobol, AS/400, and OS/400. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $[illegible]/yr. 40 hours/wk., 8:00 am - 5:00 pm. Send resumes, listing job order number [illegible], to: Mr. John [illegible], Manager, Butler County Job Center, 227 West Cunningham Street, Butler, PA 16003.

Software engineer with 2 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 2 years of experience using MFC, Visual C++, and Windows SDK. Analyzes s/w reqs. and performs coding and user training after development. Extensive travel and frequent relocation. Master's degree in one of several limited fields: engineering, mathematics, computer science or physics. $70,000/yr 40 hours/wk., 8:00 am - 5:00 pm. Send resumes, listing job order number [illegible], to: Mr. Terry [illegible], Manager, Washington Job Center, 75 East Maiden Street, Washington, PA 15301.

SOFTWARE ENGINEER needed to plan/implement conversions of applications and database from Ingres to Oracle on UNIX and Windows platforms. Provide quality assurance using automated testing tools. Master's required in Math, Computers, Engineering or any other related field of study, plus one yr exp. Must have proof of legal authority to work in the U.S. Salary: $51,000/yr for a 40-hour work week. Interested applicants send resume to Jane [illegible], JO#KY[illegible], Dept. of Employment Services, 275 E. Main St., 2W, Frankfort, KY 40621. Ad paid by An Equal Opportunity Employer.

Find I.T. Consulting Careers Here

computerworldcareers.com

Oh, Canada!

CONTINUED FROM PAGE 61

FAMILY VALUES?

"It's the immigration issue of the 1990s," declares Linda Deck, an Ontario native who moved to Milwaukee to accompany her IT consultant husband to a lucrative job at Omni Resources, Inc. in 1995.

Deck's husband holds the TN-1 visa that is quickly and easily granted to Canadian professionals who accept employment in the U.S. But Deck — and her two teen-age sons — are on TD, or "trade dependent" visas. That means they are forbidden to seek employment: "a ridiculous situation in an age when most spouses work," says Deck, who has written a book on the subject and is actively lobbying both the U.S. and Canadian governments to change the Chapter 16 section of NAFTA that restricts the employment options for TN visa holders.

There's a lot of frustration in the Canadian ex-patriot community, and employers need to be aware that limitations on the TN visa could affect their ability to attract and retain more mature workers, says Joseph C. Grasmick, an immigration attorney. "This can be a significant barrier."

three Canadians in high-level IT positions thus far this year. "And their credentials are excellent. Canada has some terrific computer science schools," he says.

And the numbers make U.S. offers look very attractive to Canadians, points out Doug Weir, president of Weir Executive Search Associates in Toronto. The Canadian dollar currently is worth only 60% of the U.S. dollar. And taxes are substantially less in the U.S. (Canadians pay in excess of 50% of their income in various taxes.) An IT job in Toronto that pays $50,000 Canadian will command a U.S. salary of $70,000 or more.

Even without figuring out the currency conversion and tax benefits, the U.S. offer is more attractive. "Do the math, and you'll see why Canadians are accepting American offers," Weir says.

IT managers in the U.S. are just being pragmatic when they head north to recruit. But the subject is a political hot potato in Canada. In the past six months, there's been a huge hue and cry about the "brain drain" causing Canada to lose its best and brightest.

There currently are 15,000 programmer vacancies in Canada, and that number is expected to swell to 20,000 by 2000, says Debbie Lough, director of human resources at Telus Advanced Communications in Calgary, Alberta. The "help-wanted" signs look remarkably similar to those being hung in the U.S., she says: Object-oriented languages. Unix. Java. Network designers.

Within her relatively small 550-employee subsidiary of Telus, Canada's telecom giant, Lough needs to find at least 100 IT workers during the next year. In the company as a whole, "they're looking to fill 200 IT positions within the next six months alone," she says. When she visits a college campus or attends a local job fair, "the Americans are there in force," she says.

Interestingly, says C. David Banks, the president of Resource Professionals, Inc., a Calgary-based technology recruiting firm, Canadian firms are much less flexible about hiring less-experienced workers.

"U.S. firms tend to be a little more flexible. They'll take people with less experience, as long as they are willing to learn the appropriate skills," Banks says. And despite the apparent urgency of the IT employment market, "Canadian firms don't seem to be willing to match the salaries paid in the U.S.," he says.

Much of that can be attributed to the fact that Canadian companies tend to be smaller, Lough points out. "It's difficult to handle a large number of recent grads when you have a relatively small IT staff," she says.

Flavian DeLima says that's changing — but slowly. After graduating from York University in Toronto with a degree in computer science in 1995, DeLima had trouble finding a job despite highly publicized shortages of IT candidates.

He founded the Canadian Youth Employment Alliance and jumped into researching human resources departments at corporations across Canada in an attempt to reconcile the apparent contradiction.

One major reason: The university system in Canada is controlled by the government; there is little synergy between industry and academia. Whereas U.S. computer science programs emphasize hands-on experience through industry alliances, co-op programs and summer internships, Canada has done little of the same.

One exception is the highly regarded University of Waterloo, which requires its computer science majors to complete off-campus stints within the industry before earning their degree. "That's also why Bill Gates heads up to Waterloo, and why Netscape recruits heavily from there as well," DeLima says. □

LaPlante is a freelance writer in Woodside, Calif.

COOL CAREER BOOKS

New career titles on IS jobs and job hunting

By Alan S. Earls

169 WAYS TO SCORE POINTS WITH YOUR BOSS

By Alan R. Schonberg with Robert L. Shook and Donna G. Estreicher, Ph.D.
NTC/Contemporary Publishing Co., Chicago; 1998; 184 pages; $14.95 (paperback)

If *169 Ways to Score Points with Your Boss* was intended as a book of modern office humor, it would probably be more successful than it is in its effort to be a serious career book. The book's 169 tips for pleasing your boss are a rehash of old-fashioned (and somewhat cynical) career wisdom about surviving in a traditional hierarchical organization. And while many of the tips reflect the genuine Dilbertian realities of today's workplace, they are also a formula for self-limiting career growth and, most likely, personal frustration.

Although each of the major topics provides caveats that soften the obsequious tone of each topic heading, it is still difficult to avoid the conclusion that Schonberg is out of touch with today's workplace. Typical passages advise readers to always stand up and shake hands when a VIP enters the room, always laugh at your boss' jokes, even when they aren't funny, and always tell the boss what a "great day you are having." Really?

WORKING IT: THE RULES HAVE CHANGED

By Greg Hutchins
Quality Plus Engineering, Portland, Ore.; 1998; 235 pages; $24.95 (spiral-bound paperback)
ISSBN 0-9654665-1-5

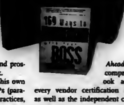
Billed as the first "post-Dilbert" book on work, *Working It* is strong on concept but weak on delivery. The author is definitely alert to the pop culture and economic signposts that are signaling the traditional world of work has changed. And he also has identified many interesting and useful ideas, tips and suggestions for surviving and prospering in the new world of work.

Hutchins serves these up in his own structure, which he calls the 7Ps (paradigms, people, principles, practices, products, processes and projects).

Working It is worth reading and highlighting — for there are useful and thought-provoking tidbits all the way through. But its flaws in design and organization can make the process a bit frustrating. In short, it's a book that requires effort.

GET CERTIFIED AND GET AHEAD: 170 COMPUTER CERTIFICATIONS THAT WILL GET YOU MORE MONEY, BOOST YOUR CAREER, MAKE YOU MORE VALUABLE

By Anne Martinez
McGraw-Hill, New York; 1998; 545 pages $24.95 (hardcover)



Finally, a "career" book that puts the whole certification circus into perspective! *Get Certified and Get Ahead* takes a comprehensive ook at virtually every vendor certification system — as well as the independent certification programs.

Indeed, this book seems to cover just about everything from the pros and cons of certification to costs and employer support to educational and study resources and even career strategies that you can use to build on certification.

Martinez, a professional writer, has produced a book that is highly readable. And, because Martinez knows the field — she writes for *Contract Professional*, holds a degree in computer science and used to work in the MIS department of a large company — the book's collection of extremely useful information is highly credible. Don't tackle certification before you read it. □

Earls is a freelance writer in Franklin, Mass.

UTILITY PARTNERS UP

Join in the explosive growth at Utility Partners, a fast-growing software developer and systems integrator devoted to electric and gas utilities – a great place for IT people during this time of deregulation! Look to us for an outstanding environment and the opportunity to share our momentum. We are looking for exceptional people with the following skills to design, develop or enhance software systems for the utility industry:

LAS VEGAS, NV OPPORTUNITIES:

Analysts - Sr. Analyst - Technical Leads - Project Managers

3-10 yrs. exp. working with Oracle databases, Oracle Designer 2000, C/S Application Development, Oracle 7.x, Oracle Developer 2000, Oracle Financials, strong RDBMS experience; must have experience in relational database design and modeling.

If you are interested in employment opportunities in Las Vegas, NV, reply in confidence to: Utility Partners, 4300 W. Tropicana, Mailstop LVO-UPL, Las Vegas, NV 89103. E-mail: tim.kemp@utilpart.com. Fax: 702-365-7028 or call 702-365-3422.

TAMPA, FL OPPORTUNITIES:

Software Engineers - Sr. Software Engineers - Technical Leads - QA Test Analyst - Production Support

3-5 yrs. exp. in UNIX, C++, Windows NT and SQL or Visual Basic or Oracle.

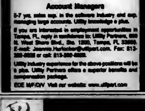
Account Managers

5-7 yrs. sales exp. in the software industry and exp. managing large accounts. Utility knowledge a plus.

If you are interested in employment opportunities in Tampa, FL, reply in confidence to: Utility Partners, 600 N. West Shore Blvd., Ste. 1200, Tampa, FL 33609. E-mail: Jeannie.Harlacher@utilpart.com. Fax: 813-288-[illegible] or call: 813-282-[illegible].

Utility Industry experience for the above positions will be a plus. Utility Partners offers a superior benefits and compensation package.

EOE M/F/D/V Visit our website: www.utilpart.com



We want you to join the best at the TOP. PSC has immediate openings for highly motivated and career oriented consultants with at least 2 years experience in one or more of the following:

- COBOL
- SAS
- DB2
- IMS
- CICS
- IMS and/or DB2 DBA
- PACBASE
- IDMS/ADSO
- C/C++
- Designer/ Developer 2000
- Visual Basic and/or Visual C++, SQL
- Lotus Notes
- ORACLE DBA
- IEF
- Decision Analyzer
- ADABAS/NATURAL

Please call, mail or fax resumes to:
Professional Software Consultants, Inc.
Keith Volk
4747 N. 7th St. #424, Phoenix, AZ 85014
(800) 279-4498, fax (602) 279-1161
resumes@psc.dpsc.com

Member NACCB A DPRC Company

[illegible]

Triad Data Inc./Renaissance Worldwide places talented professionals with Fortune 100 clients nationwide. Our Professional Services Division has opportunities for Programmer/Analysts, Systems Analysts and Software Engineers with the following skills:

Cobol (MVS or DOS) ■ PL1 ■ CICS ■ Adabas/Natural Unix ■ C/C++/Java ■ OS2 ■ Technical Recruiters Smalltalk ■ Peoplesoft ■ Sybase Developers Lotus Notes ■ Windows NT ■ Visual C++ PC Support/Help Desk ■ Oracle DBA ■ Delphi Informix Developers ■ Internet Developers ■ Oracle Systems Administrators-Unix, Windows NT, Novell

Multiple positions are available in the following metropolitan areas:
■ Boston ■ Madison ■ Milwaukee ■ Minneapolis
■ Austin ■ New York City ■ Atlanta ■ Dallas

We offer medical/dental insurance, vacation, 401K, referral bonuses, and more. For immediate consideration, send/fax your resume to
M. Jackman, Triad Data, Inc./Renaissance Worldwide
515 Madison Ave., Suite 1810, New York, NY 10022
FAX: 212-[illegible]-7881
e-mail: mjackman@nyc.triaddata.com
http://www.triaddata.com

Accelerated ASAP Partner

Your local IT partner with a global presence, providing solutions for today, tomorrow and beyond.

COMSYS, a $750M multi-national company, has various openings for SAP professionals with 2+ years of experience.

COMSYS
information technology services
A Metamor Worldwide Company

For more information or to join our world-class staff:

COMSYS
18350 Mt. Langley
Suite 101
Fountain Valley, CA
92708
fax: (714) 968-7487
phone: (800) COMSYS2
www.comsysinc.com
EOE

SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in DB2, CICS, VS COBOL and Expeditor. Requirements: Bachelor's Degree in Computer Science or related field and two years experience as a software engineer, knowledge of DB2, CICS, VS COBOL and Expeditor. Salary: $57,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Mr. Tom Rusnack, Charleroi Job Center, 10 Palmer Dr. PO Box 210, Charleroi, PA 15022, Job No. 8040060.

Software engineer with 6 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other computer professionals, with 6 years of experience using Oracle and Oracle Case Tools. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $105,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 8080050, to: Mr. Greg Schwing, Manager Pittsburgh South Job Center, 2100 Wharton Street, Pittsburgh, PA 15203.

Software engineer with 3 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 3 years of experience using Oracle, SQL Forms, Unix, Pro*C, PL/SQL, and Oracle Financials. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science, economics, business or physics. $84,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 8080080, to: Mr. Clement Pozzuoli, Manager, Connellsville Job Center, 1061 Morrell Ave., PO Box 898, Connellsville, PA 15425.

SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in DB2, CICS, Expeditor and VS COBOL. Requirements: Bachelor's Degree in Computer Science or related field and two years experience as a software engineer, knowledge of DB2, CICS, Expeditor and VS COBOL. Salary: $57,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Ms. Charlene Cagley, Beaver Falls Job Center, 2103 Ninth Avenue, Beaver Falls, PA 15010, Job No. 1018876.

Software engineer with 2 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 2 years of experience using Oracle RDBMS, SQL Plus, PL/SQL, Pro*C and Shell Scripts. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Master's degree in one of several limited fields: engineering, mathematics, computer science or physics. $77,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 5018859, to: Local Office Manager, Mon Valley Job Center, 345 Fifth Avenue, McKeesport, PA 15132.

Software Consultant - Consult with client to define electronic data process need or problem; conduct studies and surveys to obtain data, analyze them and advise or recommend solutions; and use COBOL, VSAM, DB2 and CICS. Reqs: Master's in Computer Science, Systems Analysis, Computer Information Systems, Computer Engineering, Electrical Engineering, Electronic Engineering or Mathematics or its equivalent in education and experience @ 1 yr. exp. in job offered. Will accept a Bachelor's degree, or a foreign equivalent degree, followed by at least 5 years of progressive experience in the computer software specialty in lieu of the required education and experience. $85,000/yr., 40 hrs/wk., 8:00am-5:00pm., M-F. Submit resume to Bureau of Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869. Job Order # FL-1833846

Software engineer with 3 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 3 years of experience using Visual C++, C++, and Windows, with at least one year of experience with MFC and ODBC. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $80,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 8040290, to: Ms. Charlene Cagley, Manager, Beaver Falls Job Center, 2103 Ninth Avenue, Beaver Falls, PA 15010.

Software engineer with 5 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other computer professionals, with 5 years of experience using Unix and RDBMS, with at least three years experience in Oracle Forms, Oracle Reports and PL/SQL. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $80,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 102000, to: Terry Kinney, Manager, Armstrong County Job Center, 1270 N. Water St., PO Box 759, Kittanning, PA 16201.

Software engineer with 5 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other computer professionals, with 5 years of experience using MS Windows NT, Oracle RDBMS, development tools, Network and Oracle Database Administration. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer applications or physics. $85,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 8086121, to: Mr. James Clarke, Manager, Uniontown Job Center, 22 Iowa Street, Uniontown, PA 15401.

Software engineer with 5 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other computer professionals, with 5 years of experience using SQL, C, C++, Windows and Unix. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $85,000/yr 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 5020059, to: Mr. Duane M. Brenizer, Manager, Greensburg Job Center, 599 Sells Lane, Greensburg, PA 15601

Software engineer with 3 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 3 years of experience using Powerbuilder, Oracle RDBMS, Unix, Windows NT, and PL/SQL. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $80,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 5020123, to: Mr. Ron Marsh, Manager, Alle-Kiski Job Center, 3 Kensington Square, New Kensington, PA 15068.

Software engineer with 5 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other computer professionals, with 5 years of experience using SQL Reportwriter, SQL-Forms, and Oracle, with some experience in PL/SQL. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $85,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 7040147, to: Mr. James Woods, Acting Manager, Pittsburgh East Job Center, 6206 Broad St., Pittsburgh, PA 15206.

Software engineer with 5 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other software professionals, with 5 years of experience using Oracle, Oracle Financials, Modules, General Ledger, Accounts Payable, Accounts Receivables, and Cash Management. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Master's degree in one of several limited fields: engineering, mathematics, computer applications or physics. $78,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 8040314, to: Mr. James Clarke, Manager, Uniontown Job Center, 22 Iowa Street, Uniontown, PA 15401.

October 5, 1998
1-800-488-9204

---

computerworldcareers.com

COMPUTERWORLD
c@reers

GO AHEAD – MAKE YOUR MOV

For IT contractors who just can't plant roots, many good relocation and salary comparison sites await on the Web

By Leslie Goff

INFORMATION TECHNOLOGY contractors and consultants faced with changing their scenery can plan an entire move on the World Wide Web. From selecting the ideal city for you, your family and your career, to engineering and executing the move, to finding a new home to rent or buy, it's all available to the mouse-pad traveler.

Salary calculators tell you the salary you need to earn in your new hometown to maintain the same standard of living you currently enjoy. The calculations generally are based on cost-of-living comparisons. But they usually don't take into account varying local sales and income taxes.

To maintain consistency and check for accuracy, the same two cities and salary were used for each calculation: moving from New York to New Orleans and a salary of $50,000. Except where noted, all of the salary calculators below arrived at approximately the same estimates ($50,000 in the Big Apple equals just over $19,000 in the Big Easy).

IT CONTRACTING AND CONSULTING

Here are the best sites to get you started, focusing on those that offer excellent interactive salary and cost-of-living comparisons. Relocating is stressful; used together, these sites offer peace of mind that you're making the right move.

SALARY GUIDES

Money Magazine's Best Places to Live, 1998

pathfinder.com/money/bestplaces/

This is *Money Magazine*'s 12th annual look at 300 metropolitan statistical areas nationwide. By now, the publication has relocation issues down to a science. If you're yearning to move but don't know where, this site is your best bet for making a sound decision.

The integrated salary/cost-of-living calculator offers a useful dual perspective: It not only indicates that a salary of $50,000 in New York is comparable with $19,448.03 in New Orleans, but it also responds that $50,000 in New Orleans is akin to $128,547.71 in New York. Unique among all the salary calculators, it lets you enter your salary in the destination city if you already know it. That way, it determines the move's real impact on your purchasing power by giving you the percentage increase or decrease between your current salary and expected salary.

For example, if you make $50,000 in New York and will be making $45,000 in New Orleans, you have a 10% drop in salary but a 131.39% increase in buying power.

The most innovative part of this site — and one of the most compelling features among all the relocation sites listed here, is the list generator that lets you conduct a detailed screening of cities that match your quality of life priorities. Get down to the nitty-gritty with a total of 63 factors, from whether the city has professional sports to number of days of sunshine. Be prepared to spend some time here or you can do a quick-and-dirty screening based on nine general categories.

HomeFair.com

www.homefair.com

Several interactive tools here will assist you with computing cost-of-living differences, choosing a new city, estimating relocation costs and executing your move. The International Salary Calculator here is one of the most linked-to salary calculators (*www2.homefair.com/calc/salcalc.html*). It figures salary comparisons for hundreds of cities worldwide.

The Lifestyle Optimizer creates a list of your personal-best 10 cities ranked by such criteria as location, population, median income, crime index, cost of housing, climate, unemployment rate and taxes. You pick the ideal range for each, and the optimizer does the rest. Tell the Moving Calculator how many rooms of furniture you have, and it will come up with the cost of your move; the Relocation Wizard is your personal project manager, mapping out a schedule for all your moving tasks.

Virtual Relocation.com

www.virtualrelocation.com

This site really lives up to its name. You can pretty much accomplish all your basic moving tasks from surfing the plentiful links listed here. The cost-of-living calculator generates detailed reports by comparing two cities point-by-point on 25 quality-of-life issues. The links cover every aspect of moving imaginable, from moving your kids to finding new homeowners' insurance to crime reports by neighborhood.

QUICK HITTERS: IT SALARIES BY REGION

DataMasters' 1998 IT Salary Survey

www.datamasters.com

DataMasters, an IT recruitment firm in Greensboro, N.C., features a regularly updated, region-by-region IT salary survey. It covers the major IT job titles in the Northeast, Midwest, Southeast, Southwest and West Coast. The cost-of-living calculator will arrive at higher estimates than the others because it takes local sales and income taxes into the equation. So whereas the other engines indicate that it takes only a $19,177 salary in New Orleans to match a $50,000 income in New York, DataMasters reckons you would need $23,296.87 in the Crescent City.

WageWeb Information Management Salary Data

www.wageweb.com/ims.htm

This site lists high, average and low salaries — as well as bonuses — for a total of 150 job titles, including 29 IT positions, all compiled this spring. It isn't broken down by region, but it makes a useful benchmark when used in conjunction with the other salary calculators.

GENERAL RESOURCES

Chamber of Commerce Click City

clickcity.com/index2.htm

Compare cities on a wide range of criteria and quickly link to Chamber of Commerce sites for more than 200,000 cities worldwide.

The Moving Mall

www.movingmall.com

Search this database, which contains a whopping 114,000 entries, for nationwide movers, truck rentals, employment agencies, storage services, Chambers of Commerce and more. Log on to the two discussion forums to ask or answer questions about relocating and rental opportunities. Then surf over to the sister site, RentCheck.com (*www.rentcheck.com*), for listings of more than 300,000 rental properties, complete with snapshots, floor plans and local maps.

MoversNet

www.usps.gov/moversnet

Fill out an online change-of-address form, notify others of your move, get moving tips, learn about changing your voter registration and getting your new drivers license and get maps of your new neighborhood at this nifty site run by the U.S. Postal Service. ◻

Goff is a freelance writer in New York.

bethesda healthcare system

Sr. Systems Analyst

Bethesda Healthcare System includes Bethesda Memorial Hospital (a 362 bed not-for-profit facility), Bethesda Health City, Home Health Services and a full continuum of care. Bethesda offers onsite child care and excellent benefits.

BUSINESS ANALYST. Responsible for the support and maintenance of the firm's accounting system and design of financial reports and statements using the SQL and financial report writers. Setting up the firm's chart of accounts, developing and maintaining accounting procedures and refining internal accounting systems. Research software including [illegible], Great Plains, Solomon and Oracle Financials prior to conversion from single user accounting package (QuickBooks for Windows running on Lantastic) to network package (Solomon IV for Windows running on NT). Fine tuning and restructuring chart of accounts and financial statements; testing, implementing and converting from Quickbooks to Solomon IV release 1.7. Testing, implementing and converting from Solomon IV release 1.7 to release 2.03. Responsible for internal audit of income statement and balance sheet, including audit of monthly sales figures for accuracy and completeness, and making year-end closing adjustments. Designing software which will link four systems - in-house - developed human resources and time management systems, Solomon IV and ADP. Responsible for disaster recovery, data reconstruction, data import and export, and ensuring that all Solomon modules are balanced and tie into General Ledger. Verify data integrity within the accounting system. Developing a training program to provide cross-training within the accounting department and in developing an inter-departmental procedures manual. Developing an inter-departmental procedures manual. Will supervise 4 employees. Bachelor of Science in accounting and 4 years experience required. Requires completion certificate in BASIC & COBOL languages. $53,000/year. Interested applicants apply by resume to: Georgia Department of Labor, Job Order # GA6271611, 2943 N. Druid Hills Road, N.E., Atlanta, GA 30329, or the nearest Department of Labor Field Service Office.

Kobe Japanese Steak House is seeking a Computer Systems Analyst in Altamonte Springs, Florida. $42,500 per year for 40 hrs/wk (9-5 PM). Requires Bachelor of Bus. Admin. in Computer Information Systems or equivalent foreign degree in computer science or any other field with major emphasis in computer science & 1 years experience in job offered. Responsible for analyzing the current operational procedures by conferring with personnel of employer's affiliate entities. Direct & coordinate work of others to develop & modify programs related to the employer's needs, test, install & integrate current computer data system for employer's business entities in payroll, Accounts payable, Accounts receivable & Inventory control. Prepare detailed description of user needs, Design screen layout, write structured programs, Prototype & test the new codes using structured testing, document the system with flow charts, diagrams, technical reports & develop user instruction manuals using Microsoft Office series (Word, Excel & Power Point). Support current accounting package Quick Book Pro. Once computerized accounting system is in place, direct & supervise others to maintain entire computer system & be in charge of operations of computer systems of all of employer's restaurants. Send resume to the Department of Labor/Workforce Program Support, PO BOX 10869, Tallahassee, FL 32302 Attn: EH, RE: JOFL#1836723.

Manufacturing Engineer - Responsible for direct support to the Stage 1 (PCB assembly) manufacturing process, for both prototype level and low volume revenue production, and for capacity planning in a prototype environment. Will use AutoCAD/CAD systems, necessary for design of process tooling; project planning and evaluation skills to assess needs for new equipment, generate proposal, evaluate technical and financial impacts, gain approval, test and implement equipment in a manufacturing environment. Will train manufacturing personnel and fellow engineers in equipment operation. Duties require use of MC Office tools. Will perform capacity planning to design and evaluate layouts and make decisions as line balancing. Will use simulation to aid in identification and elimination of bottlenecks, and resource and equipment capacity planning. MRP practices will be used to understand forecasting and scheduling impacts. Requirements include a Bachelor's degree or equivalent in Mechanical and Industrial Engineering or related field with at least two years experience in the job offered or as an Engineer. Applicants must have unrestricted authorization to work in the United States. Salary $47,000/year. 40 hours/wk. Respond with two copies of resume to Job Order #96-228, P.O. Box 989, Concord, NH 03302-0989.

SOFTWARE CONSULTANT to provide on-site consultancy on client/server projects using structured methodology to cover full life cycle system development including analysis, design, prototyping, coding, debugging, testing and product migration; write software programs in C++, Java, C, SQL, HTML, UNIX shell script; utilize development tools such as PowerBuilder, JBuilder, PowerJ, NetDynamics, Visual C++, Gupta SQL Windows, Visual Basic, PVCS; implement relational database Oracle with PL/SQL, SQLPlus, Pro*C/C++; develop web applications using distributed computing CORBA and Orbix; work in Windows NT, UNIX and HP9000 environments. Require: M.S. in Computer Science or Information Systems and one year experience in the job offered or as Systems Consultant. Salary: $67,000 per year, 8 am to 5 pm, M-F. Mail resume to: Principal, Attn: Job 1160, New Resources Corporation, 2600 Windy Ridge Parkway, Suite 460, Atlanta, GA 30339.

PROGRAMMER/ANALYST to analyze, design, develop, test, implement, maintain and support various application software and databases using C, Pro*C, ORACLE, FORMS, SQL*Forms, SQL*Plus, SQL*-ReportWriter, Oracle Server Manager, SQL*Dba, SQL*-Menu, SQL*Net and PL/SQL under UNIX and Windows NT platforms; Complete logical and physical design for database, as and as performance tuning; Perform ORACLE database administration. Require: B.S. degree in Computer Science/Engineering with 2 years experience in the job offered or as a Programmer. Extensive paid travel on assignments to various client sites within the U.S. is required. Salary: $60,000 per year, 8:00 am to 6:00 pm, M-F. Apply by resume to: Raghavendra Kulkarni, President, Pro Softnet Corporation, 6525 The Corners Parkway, Suite 400, Norcross, GA 30092; Attn. Job SS

Programmer/Analyst (Client sites in Orlando, FL) Design, develop, code, test, and implement programs for commercial and financial applications systems using RPG/400 in an IBM AS/400 environment. Bachelor's Degree in Comp. Sci., Engin., or Math, +1 yr. exp. req., or will accept 3 yrs. exp. in lieu of Bachelor's +1 yr. exp. $37,500/yr, 40 hr/wk; 8:30 a.m. - 6 p.m. M-F. Send resume to: Bureau of Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, Re: JO#FL-1840298.

Software Engineer - Heathrow, FL - Analyze, design, develop and test info sys using Windows API, SQL Windows, Report Windows, SQLBase with UNIX shell scripts on UNIX based hardware. Write program specs & sys docs. Enhance/debug existing programs and systems. M-F, 8AM-4PM, 40 hrs/wk, $45,000/yr. Req Bach in Comp. Sci./Engr., Math or Elect. Eng. & 6 mos exp in job. Submit resume to: Bureau of Workforce Program Support, PO Box 10869, Tallahassee, FL 32302-0869, JO#: FL-1839958.

Programmer/Analyst (Will travel between Boca Raton and Miami, FL client sites) Analyze, design, develop, code, implement, test and maintain programs for commercial and financial applications systems, using RPG/400 and SYNON/2E in an IBM AS/400 environment. Bachelor's Degree in Comp. Sci., Engin., or Math, + 2 yrs. exp. req. $37,500/yr. 40 hr/wk; 8:30 a.m.-6p.m. Send resume to: FDLES Bureau of Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302, Re: JO#FL-1827368.

Sftw Developer: Design, develop, implement & test client server (CS) applic'n w/ PowerBuilder (PB) & PowerTool (PT); Provide PB training, mentor'g & co-developm't for clients; Design, develop, maintain & test GUIs w/ CS architecture w/ Stored Procedures for DB Mgmt; Work alone at a client site/lead a developer team in-house to design DB models, optimize DB mgmt & train users w/ CS knowledge & PB program'g. 40hr/wk, 8-5, $60,547/yr. BS in Electrical Eng/related field, 1 yr in any other developer's position w/ exp. in PB 4.0 & PT. Resume to Bureau of Workforce Support, PO Box 10869, Tallahassee, FL 32302. Re: Job#FL-1840225

Systems Analyst (multiple positions) (Tallahassee, FL area) Design, development & implementation of client-customized computer systems & enhancement of existing systems in COBOL under IMS DB & DC to CICS operating environment. $50,000/yr, 40 hrs/wk, Mon - Fri 8am to 5pm. REQD: Willingness to relocate to various work locations in Tallahassee, FL at employer's expense at 6 months to one yr. intervals and 2 yrs. exp. in job offered. Send resumes to Job order #FL-1838347, Dept of Labor/Bureau of Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869.

Programmer/Analyst (Will travel between Boca Raton and Miami, FL client sites) Design, develop, code, implement, test and maintain programs for commercial and financial applications systems, using RPG/400 and SYNON/2E in an IBM AS/400 environment. Bachelor's Degree in Comp. Sci., Engin., or Math, + 1 yr. 6 mos. exp. req. $37,500/yr. 40 hr/wk; 8:30 a.m. - 6 p.m. Send resume to: FDLES Bureau of Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302, Re: JO# FL-1833086.

COMPUTERWORLD
c@reers

computerworldcareers.com

When was the last time a great job *found you?*

That's what we thought. You already know *Computerworld* as a great resource for career opportunities. Now we're bringing you **Computerworld Career Central**, the service where *the jobs find you.*

If you're a software development professional, visit **www.computerworldcareers.com**, fill out a Member Profile and submit it. We'll find jobs matched to your skills, experience and preferences and send them to you, *confidentially*, via e-mail.

Computerworld Career Central is the hassle-free, cost-free, we-do-the-work-so-you-don't-have-to job matching service that *works.*

You work hard enough.
Go to **www.computerworldcareers.com** and let *Computerworld Career Central* do the rest.

COMPUTERWORLD
Career Central™
www.computerworldcareers.com

Find I.T.
Consulting
Careers Here

computerworldcareers.com

Monday, August 31, 1998
Chicago Hyatt

1-800-488-9204

SOFTWARE ENGINEER: Design, develop, test and maintain database applications using knowledge of relational database design, and Oracle and Ingress w/ CASE tools. Develop Graphical User Interface using Power Builder, SQL Tools, SQL Forms, SQL Plus and Pro*C, SQL Reportwriter, PL/SQL, Designer 2000 and Developer 2000. Project development in in UNIX using C and Korn Shell. Requires B.S. in Comp. Sci., Electronics and Communications Engineering or related, plus 2 years work experience in the job offered or 3 years experience as a Software Engineer, Software Design Engineer, Systems Analyst or Programmer Analyst, with demonstrated ability to perform stated duties. Dallas, Texas area. Multiple openings. Mail resume to Case No. 2121, P.O. Box 1749, Keller, Texas 76244.

Consultant (Software Engineer): Uses object oriented technology to analyze, design, develop, modify, code, test and debug Oracle and/or NT server database software systems and software systems architecture which are installed in a local area network and wide area network, insures that software is compatible and is accessible within various client/server network environments and operating systems such as HP-UNIX, OS/2 and Windows 95/Windows NT by developing appropriate TCP/IP communications protocols as well as remote station polling systems. Requires M.S. or completion of all coursework for M.S. degree in Computer Science. Hours: 8:00 a.m. - 5:00 p.m. 40 hours per week at $43,000.00 per year salary. Must have proof of legal authority to work permanently in the U.S. Please send two copies of resume and cover letter to: Illinois Department of Employment Security, 401 S. State Street - 7 North, Chicago, IL 60605. Attention: Bert Grunnet, Reference #V-IL 18513-P. AN EMPLOYER PAID AD. NO CALLS.

Programmer Analyst. 40 hrs/wk from 9a.m. to 5p.m. $60,000/yr. Analysis, design, development and implementation of commercial application development systems using relational databases such as Oracle, front-end tools such as Developer 2000 and report writers such as SQR. Require two years experience in job offered or as Systems Analyst including one year using Oracle, Developer 2000 and SQL. Must have proof of legal authority to work permanently in the U.S. Please send resumes to Illinois Department of Employment Security, 401 South State Street - 7 North, Chicago, Illinois 60605, Attention: Joanne [illegible], Reference #V-IL 18664-N. An Employer Paid Ad. No Calls. Send 2 copies of both resume and cover letter.

Multiple openings for s/w eng. system analyst & program analyst. Develop & design s/w systems using various h/w, operating system tools & languages, develop client server under UNIX platforms. 40 hr/wk, 8-5pm, competitive salary. Send resumes to: Computech, 30600 N. Telegraph Rd., Suite 2150, Bingham Farms, MI 48025.

Rotella Capital Management is accepting resumes for Researcher, Technical Trading Systems. This position focuses on developing computerized quantitative investment strategies. Research [illegible] technical trading systems, portfolio algorithms, derivative pricing models [illegible] development in Delphi 3. Candidates must have at least 5 yrs. work experience as a software specialist or financial analyst of a major financial institution in development of quantitative investment strategies & derivatives pricing models. Masters degree required in financial engineering or computer science. Salary based on experience. Resume/cover letter to: Rotella Capital Management, Inc. 200 South Wacker Dr., Suite [illegible] Chicago, IL [illegible] attn: [illegible]

COMPUTERWORLD
careers

Database Administrator, assigned as Oracle DBA/Application Developer, to design, code, and test applications used in the administration and maintenance of data warehouses, utilizing SQL, PL/SQL, C/C++, and Pro*C in a client-server environment, on Unix servers and NT clients; develop and maintain Web site, utilizing HTML and Java, for Internet distribution from data warehouses; and provide technical training and consultation to internal application development teams. Multiple openings available. Requires a Master's or equivalent in Computer Science, Engineering, or closely-related field. Qualified applicants must presently be eligible for permanent employment in the United States. Successful applicant must be able to perform job duties on date of application. Salary $60,000 to $75,000 per year, depending on qualifications, plus bonus eligibility based on performance and company's employee benefit plan; 40 hours per week; overtime as needed without additional compensation. Send resume to: Ms. Cynthia Ebert, Executive Administrative Assistant, RightChoice Managed Care, Inc., 1831 Chestnut Street, St. Louis, Missouri 63103-2275. Please reference Job Requisition # 970848. An equal opportunity employer.

ORACLE/Nordic: Database Programmer. Middleton, WI manufacturer of quality [illegible] seeks individual to design, develop, and implement software systems for business and scientific applications, utilizing C, UNIX, and relational models, [illegible] and systems, including ORACLE; trouble shoot [illegible] software (Nordic); design program enhancements; set up performance standards; [illegible] applications to improve system performance; research software design and development technologies for [illegible] applications. Requires Master's degree in [illegible] science, computer engineering, or mathematics, plus one year experience as [illegible] programmer. Experience to include 1 year using C and UNIX and 6 months (or 1 college course) in relational database system design. May [illegible] and include [illegible] employment. Salary [illegible] to 50,000. 40 hour work week, 8:00 - 4:30, M-F. Two copies of resume to M. [illegible], File C100500; [illegible] P.O. Box 7972; Madison, WI 53707-7972. Reference File #C100500.

Programmer Analyst to work at job sites in various unanticipated locations throughout the U.S. Under direct supervision, design, develop, code, test and implement software applications using AS/SET, RPG/400, ILE CA400, SQL/400 and SPCS. Requires Bachelors in Comp. Sci., Comp. Eng., Electrical or Electronics Eng. Math, Statistics or its foreign equivalent in education. 2 yrs in the job offered or two yrs. in a related occupation such as Software Engineer, Project Manager and/or Systems Analyst. Related exp. must include use of AS/SET, RPG/400 and ILE CA400. $42,000/yr. 8:00 AM-5:00 PM. 40 hrs. per week. Must have proof of legal authority to work in the United States. Send your resume to the Iowa Workforce Center, 2740 S. 17th St., Clinton, Iowa 52732-7040. Please refer to Job Order IA1100784. Employer paid Ad.

Senior Systems Analyst. 40 hrs/wk Monday to Friday from 9a.m. to 5p.m. $80,000/yr. Design and develop software, quality assurance, documentation and implementation of financial, sales and distribution systems using SAP R/3, FI, SD and ABAP/4 software. Require B.S. degree in Comp. Sc. or Eng. and 6 months experience in job offered. Must have proof of legal authority to work permanently in the U.S. Please send resumes to Illinois Department of Employment Security, 401 South State Street - 7 North, Chicago, Illinois 60605. Attention: [illegible], Reference #V-IL 18215-H. An Employer Paid Ad. No Calls. Send 2 copies of both resume and cover letter.

Applications Developer, assigned as Client/Server Windows Consultant, to design, code, test, and implement Health Insurance software systems utilizing PowerBuilder, C/C++ languages, Sybase or Oracle relational database management systems, SQL, and GUI design techniques in an Unix and Microsoft Windows environment; design, code, test, and implement application development frameworks based primarily on Erisco's Facets Managed Care software; provide technical training and consultation for internal application development teams, and participate in evaluation, recommendation, and implementation of application development tools. Multiple openings available. Requires a Master's or equivalent in Computer Science, Engineering, Mathematics, or closely-related field. Qualified applicants must presently be eligible for permanent employment in the United States. Successful applicant must be able to perform job duties on date of application. Salary $60,000 to $75,000 per year, depending on qualifications, plus bonus eligibility based on performance and company's employee benefit plan; 40 hours per week; overtime as needed without additional compensation. Send resume to: Ms. Cynthia Ebert, Executive Administrative Assistant, RightChoice Managed Care, Inc., 1831 Chestnut Street, St. Louis, Missouri 63103-2275. Please reference Job Requisition # 970857. An equal opportunity employer.

Software Engineer: Analyzes, designs and develops software and related software systems to perform systems interfacing of inventory, purchasing, planning and costing data modules installed to a VAX relational database system with existing mainframe computer system including the validation testing of work functions. Writes interface codes for specified modules to extract and transmit data between existing systems to insure accuracy of data being stored in new system using C and Motif. Develops multi stage data mapping screen for purposes of mapping data flow-stream to increase efficiency of data flow. Requires Master's Degree in Software Engineering, Electrical Engineering or Computer Science. Also requires six months experience in the job to be performed or six months experience as a Programmer/Analyst. If experience in related field, entire experience must include the use of C and Motif as windows development tool to develop new functions and modules for interfacing of new software system with existing system including the validation testing of work functions. Hours: 9:00 a.m. - 5:00 p.m. 40 hours per week at $47,000.00 per year salary. Must have proof of legal authority to work permanently in the U.S. Please send two copies of resume and cover letter to: Illinois Department of Employment Security, 401 S. State Street - 7 North, Chicago, IL 60605, Attention: Bert Grunnet, Reference #V-IL 18511-P, AN EMPLOYER PAID AD. NO CALLS.

Systems Analyst, [illegible], $[illegible]/yr. Research, design and develop Software systems for high performance mapping and visualization using Object Oriented methodology. Analyze software requirements to determine feasibility of design. Evaluate test, code, and implement system using C/C++, Microsoft Visual C++, Borland C++, Microsoft Foundation Class, Open Graphic Library on Window NT and Alpha Platform. Evaluate operational and performance of overall system. Maintain web-site using HTML, Perl language and Common Gateway Interface. Requires Master's degree in Computer Science and 1 year direct experience in the job offered. Must have proof of legal authority to work in the U.S. The job order # for the job opportunity is 107816. NO CALLS PLEASE. Send resume to Shirley J. Gregory, Missouri Division of Employment Security, 1411 Main St., Kansas City, MO 64105

COMPUTER

From Str[illegible]
Comes Su[illegible]

Dain Rauscher Inc. is one of the largest, strongest, and most successful securities firms in the nation. Here, we will support you to reach your full potential in exchange for your contributions.

Software Developer

Perform system analysis and design; code, test, debug, documentation and maintenance applications in a mainframe or client/server environment. Minimum requirements: 5+ years current mainframe COBOL II CICS experience (MUST have current experience and currently working in COBOL II CICS.)

Let us show you why we're a great place to work. If you meet the above minimum requirements (candidates MUST meet minimum requirements), please forward your resume to: Dain Rauscher Incorporated, ATTN: JG, Mail Stop 1974, 510 Marquette Ave. S., Minneapolis, MN 55402-1106. FAX: (612) 607-8136. EEO/MF/AA

Applications Developer, assigned as Client/Server Unix Consultant, to design, code, test, and implement Health Insurance software systems utilizing Unix, C/C++ languages, Sybase or Oracle relational database technologies in an Unix environment; design, code, test, and implement application development frameworks based primarily on Erisco's Facets Managed Care software; provide technical training and consultation to internal application development teams; and participate in evaluation, recommendation, and implementation of application development tools. Multiple openings available. Requires a Master's or equivalent in Computer Science, Engineering, Mathematics, or closely-related field. Qualified applicants must presently be eligible for permanent employment in the United States. Successful applicant must be able to perform job duties on date of application. Salary $60,000 to $75,000 per year, depending on qualifications, plus bonus eligibility based on performance and company's employee benefit plan. 40 hours per week; overtime as needed without additional compensation. Send resume to: Ms. Cynthia Ebert, Executive Administrative Assistant, RightChoice Managed Care, Inc., 1831 Chestnut Street, St. Louis, Missouri 63103-2275. Please reference Job Requisition # [illegible]. An equal opportunity employer.

Programmer Analyst [illegible] to research, develop, [illegible] software [illegible] evaluate new request [illegible] or modified program, [illegible] with user to define [illegible] coordinate with programmers to write, design & [illegible] using Cobol [illegible] DB/DC: CICS, VSAM [illegible] interface [illegible] delete or modify code [illegible] write [illegible] describing program [illegible] develop test procedures [illegible] testing. Reqs. Master's [illegible] Sci., Comp. Engg., [illegible] Math or its [illegible] equiv. If yrs exp in [illegible] or 2 yrs related exp [illegible] Programmer Analyst [illegible] Consultant [illegible] must include [illegible] system testing [illegible] of test cases [illegible] Cobol II, DB2, TPF [illegible] CICS and VSAM [illegible] 40 hrs/wk [illegible] have proof of legal [illegible] to work permanently [illegible] 2 copies of both resume [illegible] letter (no calls) to [illegible] of Employment Security [illegible] S. State St.-7 [illegible] IL 60605, Attn: [illegible] Ref. #V-IL [illegible] Employer Paid Ad"

[illegible] Manager. To manage [illegible] Analysts' [illegible] Engineers' projects, [illegible] and develop policies [illegible] for [illegible] and support of computer [illegible] evaluate [illegible] requests for new or [illegible] programs to [illegible] feasibility, cost, time required, and compatibility with [illegible] and capabilities. [illegible] Software Division [illegible] and Technical Advisor to determine impact of [illegible] changes to hardware or software [illegible] computer operations and [illegible] to customers. Schedule [illegible] work hours and [illegible] assignments, plus [illegible] product [illegible] Maintain liaison [illegible] concerning [illegible] of changes. Evaluate new software and hardware [illegible] vendors. Consult [illegible] Directly [illegible] in twelve employees to [illegible] and [illegible] execute [illegible] in [illegible] corporate policies [illegible] hiring and [illegible] planning and assigning work, performing [illegible] rewarding [illegible] employees, addressing complaints and resolving problems. Salary: $45,760 per year. 40hr/wk. Requirements: B.S. degree in information management or computer science plus one year of experience in the job offered or one year as a systems implementation supervisor. Working knowledge of PVCS Tracker, DOS, Windows, PowerScreen, Sybase, SQL, WordPerfect 6.1 for Windows, Network and Communication software, and C language on IBM compatible PC required. Resumes to Ms. Jeanie [illegible], Missouri Division of Employment Security, 13131 New Halls Ferry Road, Florissant, MO 63033. Refer to job order number 107815. Applicants must demonstrate that they have a legal right to permanent employment in the United States.

Senior Systems Architect: Interviews conducted in Dallas, TX. Perform analysis, design & development of software systems based on structured [illegible] engineering techniques & user [illegible] in IBM 3090 environment using COBOL, CICS, DB2, VSAM, JCL & TSO. Lead 1-6 software engineers, [illegible] software projects & implement quality assurance procedures. Travel to & stay at client sites from 3 mos. to 2 yrs. Reqs. Bachelor's in Mathematics or Comp. Sci. & 5 yrs exp. in job offered or as Team/Project Leader, programmer/systems analyst. 40 hrs/wk. $84,000/yr. Apply at Texas Workforce Commission, Dallas, Texas or send resume to Texas Workforce Commission, 1117 Trinity, Room 424T, Austin, Texas 78701, J.O.# TX[illegible]. Ad paid by equal opportunity employer.

Senior Software Engineer

Energy management firm in N.E. Mass. seeks Senior Software Engineer. Develop, maintain and implement software programs for energy management applications including providing Oracle database implementation and programming; performing Object Oriented programming tasks, table design, database structures, data scrubbing, automated input programs; performing systems integration programming; providing programs, structures, coding and documentation to migrate and port from development to operations environment; performing hardware, firmware and operating system administration functions; implementing new services; and performing other programming or technical tasks.

Requires Bachelor of Science in Computer Science or equivalent; 3 years experience as software engineer, programmer or systems analyst including software analysis, design development and quality assurance of commercial applications; knowledge and ability to work with and use independently: Pentium-based IBM PC's (16 and 32 bit); HP Servers; Novell Network, MS-Windows 3.1, NT; Oracle V6.0, V7.0.

Salary: $[illegible] per year plus standard benefits. Send applications & 2 resumes to: *Case No. 71374, P.O. Box [illegible], Boston, MA 02114.*

Systems Officer, to lead project in the design, development, and implementation of a [illegible] of Risk (DMAR) System. To perform systems analysis, [illegible] financial [illegible], logical and physical database design, [illegible] performance/tuning, [illegible] development [illegible] in an UNIX [illegible] source control. [illegible] modules to connect [illegible] Sybase databases [illegible] Open Client, [illegible] CtDB-Library, ISQL, [illegible] and BCP tools. [illegible] database administration [illegible] Sybase server. Perform [illegible] projects with [illegible] including [illegible] definition [illegible] with business [illegible] and users. Must have [illegible] or equivalent (B.S. plus 4) in Computer Science [illegible] with 2 yrs. of experience in the offered position or [illegible] experience [illegible] 1 yr. with system design, [illegible] and Sybase [illegible] Open Server, [illegible] DB-Library, ISQL, [illegible] tools. 40 hrs/wk: 9 am - 5 [illegible] $70,000-80,000/yr. Send [illegible] to Case #[illegible], P.O. Box [illegible], Boston, MA 02114.

Programmer Analyst needed for software development and consulting firm located in Duluth, Georgia. Job duties include: Analyze, design, develop, code, test, and implement computer software applications. Use Oracle and PowerBuilder. Applicant must have B.S. degree in Computer Applications, Mathematics or Computer Science. Applicant must also have 2 yrs. exp. in the job duties described above or as a Programmer Analyst which includes 2 yrs. analyzing and developing computer applications using Oracle and PowerBuilder. 40hrs/wk, 8:00 am - 5:00 pm, Mon-Fri, $[illegible]/yr. Report to or send 2 resumes to: Georgia Department of Labor, Job Order GA[illegible], 1535 Atkinson Rd., Lawrenceville, GA 30043-5601 or the nearest Department of Labor Field Service Office.

Systems Analyst. Responsibilities include performing analysis functions by determining client business needs and defining cost and time estimates for development or enhancement of mission critical systems. Define specifications and write new or modified codes and test codes to verify program designs. Analyze, design, develop, implement and test application software using VAX/VMS, RdB, VISUAL BASIC, POWERBUILDER, SYBASE and ORACLE. Develop software using SQL, COBOL, PASCAL and C. Develop applications using Yourdon's structured systems development methodology involving Structured Flow Charting and Prototyping. Develop test plans and QA procedures. Prepare technical and user documentation for installing system software. Design, implement and trouble shoot project specific systems according to client objectives. Devise system testing methodology. Salary to $[illegible]/year, M-F, 40 hours per week. Must have a Bachelor's Degree or educational equivalent in Computer Science or Engineering and two years of experience as a Systems Analyst or two years of experience in a systems analysis, programming or software development position. In lieu of Bachelor's Degree and 2 years experience, employer will accept 4 years experience in position offered or in related Systems Analysis, Programming or Software Development positions. Must have proof of legal authority to work in U.S. Send resume to Georgia Department of Labor, Job Order GA[illegible], 2943 N. Druid Hills Road, Atlanta, Georgia 30329 or the nearest Department of Labor Field Service Office.

Chief Computer Programmer

Plan, schedule, and direct preparation of various computer programs to solve client related problems. Provide specification analysis, design, program coding, testing, module integration, & implementation. Hardware used include AMDHAL-5995 mainframe, Compaq PC. Software utilized include ADW (Key 4.1), Cobol II, IDMS, JCL, Files, Xpediter. Additional computer requirements are IBM-3090 mainframe machines, Application Development Workbench (ADW 2-7, now called Keys 4.1), DB2, CICS, CSP 370AD, VSAM Files, XDB, [illegible], Unix, and Oracle. Must be willing to relocate within the U.S. on a project-by-project basis. Must have Bachelor's Degree or Foreign Degree Equivalent in Engineering, Computer Science or related and 2 years' work experience in job offered or 2 years as a Programmer, Analyst/Programmer, or related. Hrs: 8a-5p, M-F. $[illegible] per yr. Apply to Georgia Dept. of Labor, Job Order #GA [illegible], 2943 N. Druid Hills Rd., Atlanta, GA 30329-[illegible] or the nearest Dept. of Labor Field Service Office.

Consultant (Software Engineer): Uses object oriented technology to analyze, design, develop, modify, code, test and debug Oracle and/or NT server database software systems and software systems architecture which are installed in a local area network and wide area network. Insures that software is compatible and is accessible within various client/server network environments and operating systems such as HP-UNIX, OS/2 and Windows 95/Windows NT by developing appropriate TCP/IP communications protocols as well as remote access calling systems. Requires M.S. or completion of all coursework for M.S. degree in Computer Science. Hours: 8:00 a.m. - 5:00 p.m. 40 hours per week at $43,[illegible] per year salary. Must have proof of legal authority to work permanently in the U.S. Please send two copies of resume and cover letter to: Illinois Department of Employment Security, 401 S. State Street - 7 North, Chicago, IL [illegible], Attention: [illegible], Reference #V-IL 18813-P, AN EMPLOYER PAID AD. NO CALLS.

Pacific Northwest

COMSYS
Information technology services

COMSYS is a leader in the national IT market with over 4,000 consultants nationwide. Our strong ethics have led the Portland branch to 11 years of strong local market leadership & local success measured in double digits.

COMSYS has various openings in Portland for consultants with 4 years of experience.

COMSYS offers a competitive compensation & benefits package. For immediate consideration, mail, fax or e-mail your resume to:

COMSYS Information Technology Services
[illegible] SW Greenburg Road, Suite 301,
Dept C, Portland, OR [illegible]
Fax (503) [illegible]
Tel (503) [illegible]
Toll free (800) [illegible]

E-mail: [illegible]
Web: http://www.comsysinc.com

When was the last time a great job *found you?*

That's what we thought.
You already know *Computerworld* as a great resource for career opportunities.
Now we're bringing you **Computerworld Career Central**, the service where
the jobs find you.

If you're a software development professional, visit **www.computerworldcareers.com**, fill out a Member Profile and submit it. We'll find jobs matched to your skills, experience and preferences and send them to you, *confidentially,* via e-mail. *Computerworld Career Central* is the hassle-free, cost-free, we-do-the-work-so-you-don't-have-to job matching service that works.

You work hard. Go to **www.computerworldcareers.com** and let us do the rest.

COMPUTERWORLD
Career Central™
www.computerworldcareers.com

FIND
I.T. Consulting Careers
HERE

computerworldcareers.com

COMPUTERWORLD
c@reers

CHANGE

The sizzling Telecom Corridor in the Dallas/Fort Worth region is where eJobs can help you apply directly and confidentially to any or all 170 high-tech companies. Don't know anything about the Dallas/Fort Worth region? Visit eJobs and you'll discover that this region has nationally recognized public schools, a sunny climate, low cost of living and has an abundance of available activities. You already know that Texas has no state income tax, didn't you?

TECHNICAL PROFESSIONALS

WE HAVE IMMEDIATE OPENINGS FOR THE FOLLOWING:

- OPTICAL/PHOTONIC ENGINEERS
- WIRELESS/RF ENGINEERS
- DSP ENGINEERS
- SYSTEM ENGINEERS
- ELEC. DESIGN ENGINEERS
- SOFTWARE DEVELOPERS
- PROGRAM MANAGERS
- SOFTWARE/HARDWARE ENGINEERS
- WEB DEVELOPERS

Apply Now! Log Onto eJobs!

www.ejobs.com/telecomcorridor

So which company fits your area of expertise? eJobs can answer that. eJobs is a versatile new job site that offers a multitude of services for the job seeker. It provides direct access to over 170 companies in the Telecom Corridor, all of which are hiring qualified technical professionals.

The instant you cut and paste your resume into eJobs, you are chosen to apply directly and confidentially to companies in the Telecom Corridor. All participating companies offer relocation assistance. So make the change to eJobs and change your present and your future.

e Jobs

[illegible]

a Service of Global Employer's Network, Inc.

[illegible]

Manager - Support Services (Multiple Openings)

Plan, estimate, recruit, schedule and oversee the delivery of software professional services and projects. Work closely with clients and field personnel to determine their requirements, and prepare project resource schedules and budgets. Ensure quality of service provided to the customer. Conduct customer satisfaction surveys. Organize project staffing to deliver the appropriate levels of software professionals with requisite skills for the design, development and implementation of client-server and legacy systems on time and within budget. Design innovative compensation and incentive plans, generate customized MIS reports on resource utilization and project profitability, prepare resource requirement and training forecasts using PC-based personal productivity tools. Conduct performance appraisals. Organize the delivery of training on leading edge client-server and Internet technologies to field staff. Bachelor's degree in Personnel Management & Industrial Relations; or in Psychology; or in Social Work; or in Business/Public Administration and 3 yrs. experience in job offered or as Personnel Manager in the MIS dept. or Information Technology industry. Relevant experience must include: A) Working knowledge of mainframe and client-server technologies and tools. B) Experience in project and resource planning and estimation. C) Experience organizing cross-platform/skill upgrade training programs. D) Extensive travel reqd. 40 hrs/week, 8 AM - 5 PM, [illegible] per year. Qualified applicants should contact or send resume to Mr. Ron Marsh, Manager, Alle-Kiski Job Center, 3 Kensington Square, New Kensington, PA 15068. Refer to Job Order # [illegible].

MANAGEMENT & IT CONSULTANTS

Explore

[illegible] technology career [illegible] just begun. Or [illegible] be an experienced software professional. What you need [illegible] company that offers [illegible] opportunities [illegible] services [illegible] management [illegible] while keeping you [illegible] technically [illegible]. That company [illegible]!

[illegible] represents [illegible] opportunity with [illegible] company [illegible] opportunities [illegible] our consulting [illegible] ranging from [illegible] management [illegible] client server [illegible] development [illegible] you have proven [illegible], and are interested [illegible] a challenging [illegible] working to support [illegible] of the world's [illegible] organizations, [illegible] have just the [illegible] for you.

CLIENT SERVER

- Unix System Admin
- Object Oriented Devel
- NT System Admin

Yr 2000 SERVICES

- Project Managers
- Prog Analyst Cobol, Database

INTERNET/INTRANET

- Java HTML
- EDI

ERP

- BAAN
- Oracle Apps
- PeopleSoft
- SAP
- JD Edwards

Join one of the industry leaders in IT Services with revenues over $190 million. Mastech has been recognized by Inc. magazine as one of the fastest-growing privately held companies four times. Now a public entity, our client base spans over 400 companies including EDS, KPMG, IBM, Ernst & Young and Cap Gemini, who rely on our expertise to achieve their goals. We are looking for dynamic individuals to play an integral role in supporting the growth of our consulting efforts.

Mastech provides a compensation plan structured to encourage and reward top performers and a full benefits program. Please fax your resume and salary history to: Mastech Corporation, Attn: National Recruitment, Fax: (412) 490-9861; Ph: (412) 490-9191.
E-mail: ExploreTheWorld@mastech.com. EOE.

MASTECH

www.mastech.com

---

sap (sap) n. 1. The liquid that circulates through plant, carrying food substances. 2. Vigor; energy. 3. Slang. A gullible person; dupe.

SAP has been re-defined!

Call us for [illegible] opportunities worldwide in all phases of SAP. Let US help YOU [illegible] in their re-engineering efforts. We [illegible] in all modules, functional and technical and [illegible] assignments.

1975 E. [illegible], Suite 100 • Atlanta, GA 30339
[illegible] • 770-955-1714
FAX: [illegible] • 800-457-8776
E-mail: [illegible]
[illegible]

[illegible] COMPANY, INC.

[illegible] Company

Programmer Analyst ([illegible]) - Multiple Openings

Structured systems analysis, design, development, testing, quality assurance, implementation, integration, maintenance and support of integrated client-server based systems for business, financial, banking, manufacturing and other commercial business application systems in a multi-hardware/multi-software environment using centralized or distributed relational database management systems, 4GLs (Fourth Generation Languages) and other GUI (Graphical User Interface) front-end tools. Analysis, design and development of client-server applications using object-oriented methodology. Bachelor's Degree (or equivalent) in Computer Science/Math/Engineering/Science/Business-Commerce and 1 yr. experience in job offered or as Software Engineer/Systems Analyst are required. Must have appropriate combination of skills as follows: 1 of A and 2 of B; or 2 of A and 1 of B; or 3 of A. A includes Oracle, Sybase, Informix, Progress, Ingres and B includes PowerBuilder, Visual Basic, MS-Windows, Visual C++, JAM, APT-SQL, SQL*FORMS, ESQL/C, GUPTA SQL, Progress 4GL, Informix 4GL, Ingres 4GL, C; High mobility preferred. 40 hrs/week, 8 am - 5 pm. $65,300 - $75,000 per year. Qualified applicants should contact or send resume to Mr. James Woods, Acting Manager, Pittsburgh East Job Center, 6936 Broad Street, Pittsburgh, PA 15206. Refer to Job Order # 1016977.

Information Systems Senior Associate needed for Cincinnati [illegible] company. Duties include [illegible] the planning, [illegible] and executing of the [illegible] design and implementation of interface conversion programs and modifications to the Systems, Application and Products (SAP) in Data Processing in R/3. Provide the technical implementation to the modules of SD (Sales and Distribution) and MM (Materials Management). Develop solutions, specifications, and configurations for conversion programs, provide testing and documentation. Manage overall implementation projects, supervise technical implementation of the SAP system within the framework of projects or departments [illegible] existing SAP software systems. Provide profitability analysis for all new projects and contracts. Utilize ARIS toolset for analysis and feasibility for Business Process Reengineering in SAP R/3. Job requirements: Bachelor Degree or equivalent* with major field of study in Information Systems or Computer Science; minimum 2 years experience in job described or 2 years experience as Computer Programmer.** (*Equivalent may be Foreign Credential Evaluation in lieu of degree.) (**Experience must be in SAP.) 40 hours/week. Monday through Friday, 8:30am to 5:00pm; $75,000/year. Send 2 resumes and cover letters (no calls) to [illegible], NSFO 48218, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216. EOE

[illegible]

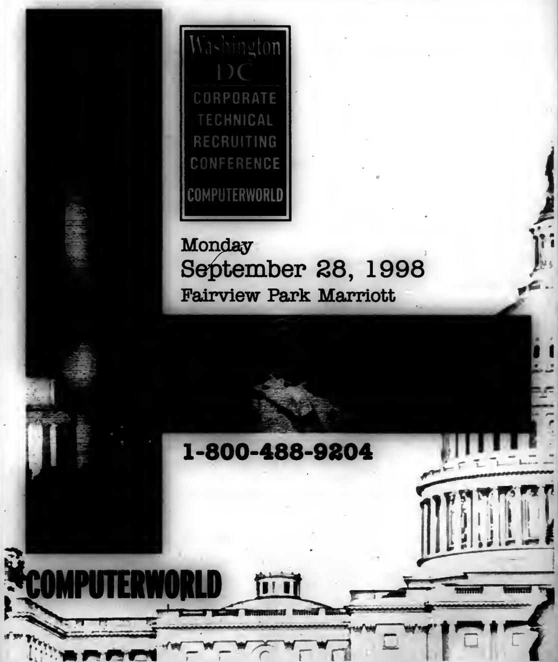
[illegible] needed by a General [illegible] developer of integrated [illegible] information technology to [illegible] entire life cycle [illegible] development, which includes requirement gathering, analysis, design, modeling, implementation, testing, debugging and [illegible] for retail industry using 4GL. Develops [illegible] of applications using PowerBuilder, SQL, Oracle and Sybase in Windows 95 or Windows NT. Performs configuration management and version control using PVCS. Uses Case Tools for computer modeling. Must have B.S. in Computer Science. In lieu of bachelor's degree, applicant may qualify with 2 and 1/2 years experience in life cycle system development using PowerBuilder, PVCS and SQL along with either Oracle or Sybase. Must have 6 mos. exp. in job offered or 6 mos. exp. in life cycle system development using PowerBuilder, PVCS and SQL along with either Oracle or Sybase. Experience may be gained concurrently. Work schedule: 40 hours/week, [illegible], Monday-Friday. Salary [illegible] per year. Must have proof of legal authority to work permanently in the U.S. Applicants report to or send 2 resumes to Georgia Dept of Labor, Job Order # GA [illegible], 2943 N. Druid Hills Rd., Atlanta, GA 30329 or the nearest Dept of Labor Field Service Office.

Software engineer with 3 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 3 years of experience using SQL, COBOL, IBM 3090/MVS, CICS, DB2, JCL, CA7-11, and TSP/ISPF. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $65,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 7040150, to: Mr. James Mackin, Actg. Manager, Pittsburgh North Job Center, 1122 Western Avenue, Pittsburgh, PA 15233.

SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Progress 4GL, Progress 7.3, C and UNIX. Requirements: Bachelor's Degree in Computer Science or related field and two years experience as a software engineer, knowledge of Progress 4GL, Progress 7.3, C and UNIX. Salary: $67,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week. Involves extensive travel and frequent relocation. Apply: Mr. Clement Pizzulli, Connellsville Job Center, 1051 Morrell Ave., PO Box 588, Connellsville, PA 15425, Job No. 2020138.

Software engineer with 2 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 2 years of experience using Oracle, with some experience in Oracle Developer, Oracle Procedure Builder, PL/SQL, Pro*C, Unix, and Oracle Database Administration. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $75,800/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 7040166, to: Mr. Richard [illegible], Actg. Mgr., Beaver County Job Center, 120 Merchant Street, Ambridge, PA 15003.



COMPUTERWORLD HEADQUARTERS: 500 Old Connecticut Path, PO Box 9171, Framingham, MA 01701-9171
Phone: (508) 879-0700, Fax: (508) 875-4394

Publisher
Jim Martin

Vice President/Enterprise Publishing Group
Elaine R. Offenbach

Regional Vice President North/Central
Sherry Driscoll

Regional Vice President
Southwest
Ron Hall

Regional Vice President
Northwest
Linda Holbrook

NORTH/CENTRAL

Director: Isabelle Kane; Senior District Manager: Laurie Marinone; Account Executive: Dianne McNeil; Sales Operations Manager: Leslie Murray; Sales Associates: Cheryl Giangregorio, Samantha Hadley, 500 Old Connecticut Path, Framingham, MA 01701 (508) 879-0700 Fax: (508) 270-3882 TDD: (800) 428-8244

Senior District Manager: Blayne Long; Sales Associate: Jasmine Huffman, 875 N. Michigan Avenue, Suite 2846, Chicago, IL 60611 (312) 943-4266 Fax: (312) 943-2214

Senior District Manager: Jennifer Hedges; Senior Sales Associate: Brenda Shipman, 14651 Dallas Parkway, Suite 118, Dallas, TX 75240 (972) 233-0882 Fax: (972) 701-9008 TDD: (800) 822-4918

EAST

Director: Fred LoSapio; District Manager: John Bosso; Account Executive: Maureen Grady; Sales & Office Associate: Susan Kusnic; Senior Sales Associate: Jean Dellarobba; Sales Associate: John Radzniak, Mack Center 1, 365 West Passaic St., Rochelle Park, NJ 07662 (201) 587-0090 Fax: (201) 587-9255, (201) 587-1289 TDD: (800) 208-0288

Mack Center 1, 365 West Passaic St., Rochelle Park, NJ 07662 (201) 587-0090 Fax: (201) 587-9255, (201) 587-1289 TDD: (800) 208-0288

Director: Lisa Ladle-Wallace, 5242 River Park Villas Dr., St. Augustine, FL 32092, (800) 779-5622 Fax: (800) 779-8622

NORTHWEST

Senior District Manager: Leslie Hutchison; District Managers: Angela Flores, Denyce Kehoe; Account Executives: Kevin Ebmeyer, Monica Kormoczy, Marc Wilkie; Sales Associates: Bonni-Jo Bouchard, James Dunn, Amy Hudson; Operations Coordinator: Emmie Hung; Office Services: Jessica Abude; Sales Coordinator: Yvonne Zuniga, 177 Bovet Road, Suite 400, San Mateo, CA 94402 (650) 357-0200 Fax: (650) 524-7000 TDD: (800) 900-3179

Director: Sharon Chin; Senior Sales Associate: Jill Colley, 10900 N.E. 8th Street, Suite 820, Bellevue, WA 98004 (425) 451-0211 Fax: (425) 451-3822

SOUTHWEST

Director: Ernie Chamberlain; District Manager: Tom Vonsek; Senior Account Executive: Claude Garbarino; Sales Associate: Brian Shindledecker; Operations Coordinator: Madeleine Fortich, Office Services: Jessica Abude; Sales Coordinator: Yvonne Zuniga, 177 Bovet Road, Suite 400, San Mateo, CA 94402 (650) 357-0200 Fax: (650) 524-7001 TDD: (800) 900-3179

Senior District Manager: Cindy Wager; Account Executive: Robert Pietsch; Senior Sales Associate: Pat Duhl, 2171 Campus Drive, Suite 100, Irvine, CA 92612 (949) 250-3942 Fax: (949) 476-8724

ADVERTISING OPERATIONS PRINT & ON-LINE

Senior Display Advertising Coordinator: Gregg Pinsky, (508) 879-0700 Fax: (508) 879-0446

Boston: Director of Operations/Carolyn Medeiros; Project Coordinator/Heidi Broadley; Managing Editor/Peter Bochner, 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171 (508) 879-0700 Fax: (508) 875-6310

San Francisco: Director/Michele Gerus; Senior Sales Operations Coordinator/Nikki Wilson, 500 Airport Boulevard, Suite 400, Burlingame, CA 94010 (415) 347-0555 Fax: (415) 347-8312

East: Mack Center 1, 365 West Passaic St., Rochelle Park, NJ 07662 (201) 587-0090 Fax: (201) 587-9255, (201) 587-1289

Sales Manager/Laurie Gomes, 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171 (508) 820-8249 Fax: (508) 875-3701

East: Account Director/Norma Tamburrino, Mack Center 1, 365 West Passaic St., Rochelle Park, NJ 07662 (201) 587-8278 Fax: 201-712-0430

Midwest: Account Director/Linda Clinton, 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171 (508) 820-8288 Fax: (508) 875-3701

California, Alaska, Hawaii: Account Executive/Jason Bishop, 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171 (508) 271-8009 Fax: (508) 875-3701

West: Account Executive/Maureen Roberti, 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171 (508) 271-8007 Fax: (508) 875-3701

Marketing Director/Derek E. Hulitzky; Operations Director/Cynthia Delany, 500 Old Connecticut Path, Framingham, MA 01701-9171 (800) 343-6474

New England & Upstate New York: Regional Manager/Nancy Percival, 500 Old Connecticut Path, Framingham, MA 01701 (800) 343-6474, Senior Account Executive/Nancy Mack, (800) 343-6474

Mid-Atlantic: Regional Manager/Jay Savell, 4100 Ferncroft Lane, Bethlehem, PA 18020-7617 (610) 867-5288, Senior Account Executive/Caryn Dlott, (800) 343-6474 TDD: (800) 208-0288

South Atlantic: Regional Manager/Katie Kress-Taplett, 8304 Professional Hill Drive, Fairfax, VA 22031 (703) 280-5162, Product Manager/Pauline Smith (800) 343-6474

Midwest: Regional Manager/Pat Powers, 1011 East Touhy Avenue, Suite 550, Des Plaines, IL 60018 (847) 827-4433, Account Executives/Nicholas Burke, Susan Hammond, (800) 343-6474 TDD: (800) 227-9437

West: Regional Manager/Christopher Glenn, 177 Bovet Road, Suite 400, San Mateo CA 94402 (415) 665-2443, Account Executives/Kate Angelone, Chris Connery, (800) 343-6474

MARKETING: *Marketing Director*/Chris McGarry, *Marketing Manager*/Stuart C. Dale, *Art Director*/Gary Suen, *Copywriter*/Steve Stamates **CIRCULATION:** *Vice President Circulation*/Maureen Burke **PRODUCTION:** *Production Director*/Christopher P. Cuoco, *Production Manager*/Beverly Wolff **DISTRIBUTION:** *Distribution Manager*/Bob Wescott, *Traffic Manager*/Pat Walker **RESEARCH:** *IT Market Analyst*/David Daoud, *Research Analyst*/Matt Duffy, *Research Analyst*/Candace O'Keefe, *Associate Research Analyst*/Jim Karalekas

President/CEO
Jim Martin

Chief Operating Officer
Bob Ainsworth

Vice President/Marketing
Cynthia L. Ahart
(508) 820-8272

Vice President of IS
Richard Broughton
(508) 620-7700

Vice President/Recruitment Advertising
John Corrigan
(508) 820-8273

Vice President/Editor
Paul Gillin
(508) 620-7724

Vice President/Information Management Group
Scott R. Kleinman
(650) 524-7060

Vice President/General Manager New Media & Information Mgmt.
Richard Mikita
(508) 628-4766

Senior Vice President/Consumer Marketing
Gail Odeneal
(508) 820-8234

Vice President/Human Resources
Susan C. Perry
(508) 820-8160

Senior Vice President/Finance
Matthew C. Smith
(508) 820-8102

Chairman of the Board, Patrick J. McGovern **President, Kelly Conlin** **Chief Operating Officer, Jim Casella**

Computerworld is a publication of International Data Group, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. International Data Group publishes over 285 computer newspapers and magazines and 500 book titles in 75 countries. Sixty million people read one or more International Data Group publications each month.

We want to solve it to your complete satisfaction, and we want to do it fast. Please write to:

Computerworld, P.O. Box 2043, Marion, Ohio 43305-2043.

Your magazine subscription label is a valuable source of information for you and us. You can help us by attaching your magazine label here, or copy your name, address, and coded line as it appears on your label. Send this along with your correspondence.

Address Changes or Other Changes to Your Subscription

All address changes, title changes, etc. should be accompanied by your address label, if possible, or by a copy of the information which appears on the label, including the coded line.

Your New Address Goes Here Address shown: ☐ Home ☐ Business

Name
Company
Address
City State Zip

Name Title Company Address City State Zip

Other Questions and Problems

It is better to write us concerning your problem and include the magazine label. Also, address changes are handled more efficiently by mail. However, should you need to reach us quickly the following toll-free number is available: 1-800-552-4431 Outside U.S. call (740) 382-3322. Internet address: circulation@cw.com

COMPUTERWORLD allows advertisers and other companies to use its mailing list for selected offers we feel would be of interest to you. We screen these offers carefully. If you do not want to remain on the promotion list please write to the following address – COMPUTERWORLD, Circulation Department, 500 Old Connecticut Path, Framingham, MA 01701.

The Week in Stocks

Gainers

[illegible]

INDUSTRY ALMANAC

'Price war' hits margins

[illegible] falling prices being pushed ever lower by [illegible] to streamline their [illegible] it has [illegible] a [illegible] PC shipments have [illegible] 15.9 million units to the [illegible] but gross margin percentages have [illegible]

[illegible] 's gross margins for the first [illegible] slightly the same time last year, [illegible] Corp. study. IBM's [illegible] spokesman) also fell, [illegible] said "a question [illegible] to [illegible] profit was down [illegible]

On [illegible] percent [illegible] compared to [illegible] according to [illegible] at Dallas-based [illegible] and to squeeze [illegible] price has fallen [illegible] In general— [illegible]

GROSS PROFIT MARGINS FOR PC MAKERS

	Q1 1997	Q1 1998
Compaq	26.9%	18%
Dell	21.6%	22.3%
IBM*	32.4%	28.3%

*Includes [illegible] hardware, not just PCs.

Source: International Data Corp., Framingham, Mass.

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
COMS	50.75	36.00	3 Com Corp.	30.00	1.19	4.1
AIT	55.19	40.13	Ameritech Corp.	47.19	-0.08	-0.1
ASND	35.00	35.00	Ascend Communications	44.44	-2.08	-4.4
T	36.00	36.00	AT & T	59.09	-0.13	-0.3
BNYN	18.88	1.75	Banyan Systems Inc.	5.50	-0.08	1.1
BAY	41.88	21.38	Bay Networks Inc.	28.94	0.44	3.4
BEL	36.00	36.00	Bell Atlantic Corp	41.94	0.44	1.1
BLS	73.00	49.31	BellSouth Corp	65.38	1.88	-2.8
BRKT	35.00	9.50	Brooktrout Technology	15.00	1.38	0.4
CS	36.03	8.00	Cabletron Systems (L)	3.08	-0.81	0.4
CGRM	21.88	8.00	Centigram Communications	00.75	-0.08	3.4
CSCO	104.50	45.50	Cisco Systems Inc.	101.13	0.00	5.5
CMNT	8.00	8.38	Computer Network Tech.	8.60	0.13	-4.3
CNCX	41.00	7.88	Concentric Network Corp.	22.25	-0.69	3.0
DIGI	35.60	24.50	DSC Communications	.2894	-0.31	1.1
FORE	36.00	23.25	FORE Systems Inc.	22.81	-0.08	-3.7
GDC	7.88	2.25	General DataComm Inds.	1.88	-0.08	1.8
GSN	47.25	35.69	General Signal Networks	40.25	1.75	4.5
GTE	14.88	36.00	GTE Corp.	49.19	0.00	0.0
LU	108.50	36.00	Lucent Tech.	85.31	3.19	-1.6
MADGF	0.19	3.19	Madge Networks NV (L)	8.88	0.13	3.8
MCIC	36.63	27.31	MCI Communications Corp.	36.00	3.50	2.4
NETM	5.25	3.47	NetManage Inc. (L)	3.47	-0.34	19.0
NTRX	8.00	0.63	Netrix Corp.	1.19	-0.25	17.4
NCDI	13.75	1.88	Network Computing Devices	7.88	0.13	1.8
NWK	20.63	11.63	Network Equipment Tech	14.88	-0.31	-4.3
NN	36.00	18.63	Newbridge Networks Corp.	22.50	-0.13	-0.6
NT	60.25	30.69	Northern Telecom Ltd.	52.75	1.83	2.4
NOVL	13.63	8.81	Novell Inc.	11.38	0.00	3.0
ODSI	14.88	5.19	Optical Data Systems Inc.	3.50	-0.63	-10.2
PCTL	30.00	8.00	PictureTel Corp	7.75	-0.63	-7.5
OPEN	8.00	0.97	Proteon Inc.	1.88	0.00	7.9
RACO	4.33	1.88	Racotek Inc.	2.19	-0.13	-5.4
RADS	24.38	8.00	Radiant Systems Inc	7.88	1.00	-17.6
VRTL	33.83	3.88	Retix	2.51	-0.06	-4.3
SBC	40.56	24.50	SBC Communications	39.31	0.25	0.6
SFA	27.94	14.88	Scientific Atlanta Inc.	23.00	1.19	-4.9
SHVA	16.44	8.00	Shiva Corp	2.25	0.25	4.2
FON	75.63	49.25	Sprint Corp.	80.00	-0.19	1.3
QWST	47.88	17.19	QWest Communications Intl. Inc.	23.13	5.31	33.8
SMSC	28.19	7.86	Standard Microsystems Corp.	8.00	-0.25	-8.6
USW	26.00	0.19	U S West Inc.	36.09	-0.08	1.7
XIRC	29.83	8.03	Xircom (H)	24.50	1.38	5.3
XYLN	31.31	36.00	Xylan Corp.	28.13	1.19	-0.1

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
AAPL	43.75	12.75	Apple Computer Inc. (H)	40.75	3.83	3.8
CPQ	24.38	23.23	Compaq Computer Corp.	35.19	0.56	3.8
DELL	122.94	35.00	Dell Computer Corp. (H)	116.44	13.11	13.5
GTW	36.00	35.00	Gateway 2000 Inc.	57.63	-0.88	-0.6
HWP	36.00	35.00	Hewlett Packard Co.	54.50	3.88	3.0
MUEI	28.19	0.44	Micron Electronics Inc.	15.56	1.09	7.5
NIPNY	28.13	36.00	NEC America (L)	36.00	-0.08	-1.3
SGI	36.00	36.00	Silicon Graphics	11.19	0.63	3.0
SUNW	38.03	36.00	Sun Microsystems Inc.	47.04	0.56	1.2

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
DGN	37.88	10.75	Data General Corp. (L)	11.44	0.13	1.1
IBM	130.13	36.03	IBM	124.50	1.75	1.4
MDCD	8.00	2.75	Memorex Data Inc. (L)	2.19	-0.31	-10.2
NCR	36.00	25.63	NCR Corp	25.00	1.00	-0.3
PRCM	20.00	4.06	ProCom Technology, Inc.	5.63	-0.81	-8.3
SQNT	31.25	8.88	Sequent Computer Sys. (L)	8.88	-3.19	11.7
TEXM	8.00	2.19	Texas Micro Inc	8.81	-0.25	7.1
SRA	60.75	36.00	Stratus Computer Inc.	33.13	-1.63	-4.0
UIS	36.00	16.00	Unisys Corp.	25.03	-1.33	-4.3

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
ADBE	24.30	36.00	Adobe Systems Inc.	36.00	-2.00	-7.4
AMSWA	15.63	8.00	American Software Inc.	3.75	-0.44	10.4
APLX	22.50	8.00	Applix Inc. (L)	3.00	0.19	0.7
ARSW	36.09	25.11	Arbor Software	36.00	-2.75	-8.3
ARDT	10.88	8.03	Ardent Software	13.13	-0.15	-0.3
ARSC	.2088	16.09	Aris Corp.	21.94	-4.06	-15.6
ADSK	51.13	26.00	Autodesk Inc.	36.00	-4.56	-20.2
BMCS	24.50	27.88	BMC Software Inc.	48.81	0.00	0.3
BOOL	26.00	16.09	Boole and Babbage	22.81	1.88	3.0
BOBJY	36.00	8.00	Business Objects	12.88	1.00	7.2
CAYN	8.00	8.00	Cayenne Software Inc. (L)	0.47	-0.19	-28.6
CNTR	5.26	8.00	Centura Software	1.56	-0.13	7.4
CHKPF	36.00	21.38	Checkpoint Software Tech. Ltd.	23.75	-0.08	-2.4
COGNF	24.30	17.83	Cognos Inc.	21.88	-0.06	-0.3
CA	61.50	36.09	Computer Associates	36.00	-3.44	-8.6
CPWR	80.31	36.00	Compuware Corp.	14.63	1.88	1.9
CSRE	3.88	8.03	Comshare Inc.	4.00	-0.08	-8.6
CORFF	8.00	3.38	Corel Corp.	1.44	-0.08	-4.3
DWTI	0.56	2.13	Dataware Technologies Inc.	3.19	-0.08	1.9
DCTM	36.63	36.00	Documentum, Inc.	36.00	-0.08	-6.1
FILE	30.00	7.36	FileNet Corp.	36.00	-1.63	-7.3
FRTE	36.00	8.00	Forte Software	4.50	-0.19	-4.0
FTPS	8.03	1.06	FTP Software Inc.	3.88	-0.13	10.5
GPSI	36.00	36.00	Great Plains Software, Inc.	35.60	-0.08	-4.3
HUMCF	14.25	79.00	Hummingbird Comm. Ltd. (L)	.2019	0.50	2.5
HYSW	36.03	25.60	Hyperion Software Corp.	.2875	-0.18	-2.4
IRIC	30.00	24.50	Information Resources	12.81	-0.44	-3.5
IFMX	24.30	8.00	Informix Corp.	8.03	-0.22	-4.0
INPR	25.19	0.53	Inprise Corp.	0.19	-0.08	-5.7
INGR	14.19	8.00	Intergraph Corp.	8.88	-0.06	-0.9
LEAF	8.00	3.25	Interleaf Inc.	1.63	0.19	33.0
ISLI	27.25	11.29	Intersolv Inc.	16.41	-0.08	-4.9
INTU	67.08	35.63	Intuit Inc.	46.38	0.56	2.5
JDEC	36.09	24.88	J.D. Edwards Co.	39.00	-3.29	-7.7
TLC	30.03	36.09	Learning Co. (The)	24.30	-4.31	16.0
MANU	60.28	28.19	Manugistics Group, Inc.	21.19	-0.08	-3.9
MAPS	14.85	8.00	Mapinfo Corp.	33.25	-3.85	-19.0
MATH	8.03	8.00	MathSoft	0.88	-0.25	-9.5
MENT	24.30	0.19	Mentor Graphics	8.00	-0.08	-8.3
MIFGY	30.03	25.00	Micro Focus	25.00	0.00	0.0
MGXI	14.88	4.08	Micrografx Inc.	12.75	-0.88	-0.6
MSFT	119.63	30.00	Microsoft Corp.	108.09	5.13	4.9
OBJS	8.05	0.44	ObjectShare, Inc.	0.80	-0.08	-20.0
OMTL	36.00	3.83	Omtool Ltd	4.19	-0.19	-4.3
ORCL	43.13	17.75	Oracle Corp.	24.13	0.56	1.8
PMTC	24.30	24.30	Parametric Technology	15.88	-0.27	-3.8
PSFT	57.40	26.00	PeopleSoft	21.50	-0.88	-8.5
PTEC	36.00	8.00	Phoenix Technologies	0.35	-1.13	-10.8
PSQL	27.25	7.63	Platinum Software	10.00	3.38	-9.1
PLAT	14.83	18.75	Platinum Technology	25.13	-0.88	-3.7
PRGS	.2013	33.88	Progress Software Corp.	24.30	3.88	19.8
RNBO	.2813	30.00	Rainbow Technologies Inc.	26.00	-0.88	-5.6
REDB	11.83	0.80	Red Brick Systems Inc.	2.31	-0.08	-8.6
ROSS	5.40	2.08	Ross Systems, Inc.	0.88	-0.08	-0.8
SCOC	7.85	2.63	SCO Inc.	0.00	-0.04	-10.2
SDTI	43.75	30.60	Security Dynamics Tech.	13.25	0.88	3.8
SSW	32.81	30.00	Sterling Software Inc.	24.50	-1.00	-3.6
SDRC	36.00	10.00	Struct. Dynamics Research	10.00	-0.75	-5.9
SYBS	23.63	6.13	Sybase Inc.	8.00	-0.81	10.8
SYMC	32.63	17.88	Symantec Corp	21.69	-2.75	31.3
SNPS	47.13	29.13	SynOpsys	30.41	-5.78	16.0
SSAX	17.44	8.00	System Software Assoc.	4.94	-0.08	-10.2
SYSF	33.88	1.88	Systemsoft Corp	1.16	-0.16	11.9
BAANF	55.00	36.00	The Baan Co.	33.63	-0.08	-5.6
TRUV	5.19	0.19	Truevision Corp.	1.86	0.11	9.1
VIAS	59.11	9.08	Viasoft Inc. (L)	10.00	-0.08	-5.3
VSIO	36.00	36.00	Visio Corp.	30.97	-6.03	-13.8
WALK	20.44	7.25	Walker Interactive Systems (L)	8.63	0.50	6.2
WALL	71.88	.2013	Wall Data Inc.	14.08	2.13	17.9
WANG	32.25	19.13	Wang Laboratories Inc.	23.88	-0.83	-2.0

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
AMZN	147.00	12.44	Amazon.com	125.50	0.94	0.6
AOL	140.50	31.94	America On-Line	108.88	3.38	3.4
ATHM	57.25	18.88	At Home Corp	44.08	-1.88	-3.3
EDFY	22.13	5.13	Edify Corp (L)	5.19	-0.88	-8.6
XCIT	55.06	7.19	Excite, Inc.	36.09	-1.25	3.0
SEEK	35.00	8.00	Infoseek Corp.	26.63	0.19	0.5
LCOS	107.83	36.00	Lycos Inc.	71.75	10.19	10.8
NSCP	44.63	14.88	Netscape Comm. Corp	28.16	-0.97	2.5
NSOL	36.00	11.75	Network Solutions Inc	16.13	0.19	2.1
OMKT	19.11	8.00	Open Market Inc.	11.56	-0.75	-6.1
PEGS	11.88	10.00	Pegasus Systems	18.25	0.94	5.4
PSIX	31.94	4.25	PSINet	17.44	-0.81	-4.5
QDEK	3.40	0.61	Quarterdeck Corp (L)	0.41	-0.13	-23.5
SCUR	15.25	5.36	Secure Computing Corp.	3.83	-1.44	-13.0
SPYG	18.88	8.00	Spyglass Inc.	13.00	0.80	28.4
YHOO	103.19	17.13	Yahoo! Inc.	94.19	3.01	3.1

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
AMD	42.44	15.19	Advanced Micro Devices	17.00	-1.06	-8.6
ADI	36.00	.2019	Analog Devices Inc. (L)	18.75	-0.85	-16.4
CRUS	17.19	5.25	Cirrus Logic	8.53	-0.47	-5.2
CY	18.94	7.88	Cypress Semiconductor Corp	7.44	-0.08	-8.6
INTC	103.75	65.66	Intel Corp	84.19	-1.94	-4.3
LSCC	74.50	25.63	Lattice Semiconductor	35.00	-1.31	-4.3
LSI	19.88	14.88	LSI Logic Corp (L)	14.88	-4.00	-21.5
MCRL	36.00	21.88	Micrel Semiconductor Inc.	34.63	-3.50	-4.2
MU	28.13	30.00	Micron Technology	36.60	-4.56	13.7
MOT	61.13	48.56	Motorola Inc.	48.19	-1.19	-8.6
NSM	42.88	11.31	National Semiconductor (L)	11.33	-1.81	-13.8
RMBS	36.00	35.50	Rambus Inc	62.08	1.33	1.6
TXN	71.25	.2063	Texas Instruments	56.63	-3.13	-5.2
VLSI	36.09	11.08	VLSI Technology (L)	11.00	-1.25	-9.5
XLNX	55.63	.2850	Xilinx	39.08	-0.08	-4.8

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
ADPT	54.25	36.60	Adaptec Inc.	12.69	-1.30	-8.6
APCC	34.00	22.13	American Power Conversion	32.00	0.13	0.4
ANDA	3.01	0.00	Andataco Inc.	2.51	-0.19	-18.0
CREAF	25.00	0.56	Creative Technology Ltd.	11.25	1.44	14.6
RACE	9.75	0.00	Data Race Inc.	0.00	-0.06	-8.3
DTM	10.89	7.86	Dataram Corp	12.38	-0.08	-4.3
EMC	80.63	23.50	EMC Corp. (H)	36.00	0.00	7.0
EMLX	19.75	5.31	Emulex Corp.	11.06	0.00	0.6
ESCC	35.88	21.44	Evans and Sutherland	23.44	0.04	3.8
EXBT	12.75	5.63	Exabyte	6.06	-0.19	-3.0
IISFD	8.60	0.00	Intelligent Info. Systems (L)	0.88	-0.03	-5.6
IOM	16.75	8.63	Iomega Corp.	3.88	-0.25	-4.3
KMAG	23.85	0.83	Komag Inc.	3.31	-0.13	-5.6
MTSI	14.88	10.00	Micro Touch Systems Inc.	14.25	0.00	2.7
MTIC	17.85	8.00	MTI Technology Corp.	6.47	-0.03	-0.3
AQM	23.08	2.25	QMS Inc.	3.88	0.00	3.0
QNTM	43.25	14.81	Quantum Corp.	17.19	-1.19	-9.2
RDUS	7.50	1.44	Radius Inc.	1.38	-0.81	-17.2
SEG	43.31	17.19	Seagate Technology	24.30	-2.09	-0.9
SOS	14.00	0.63	Storage Computer Corp (L)	2.75	-0.13	-8.3
STK	51.13	25.33	Storage Technology	36.00	-0.31	-0.6
TEK	48.19	21.00	Tektronix Inc. (L)	21.06	-7.00	-25.5
WDC	54.19	10.89	Western Digital Corp.	11.31	-1.81	13.8
XRX	116.50	66.19	Xerox Corp	101.13	3.13	9.1

Exch	52-Week	Range		Aug. 21 3 pm	Wk Net Change	Wk Pct Change
AMSY	34.50	17.63	American Mgmt. Systems (H)	36.00	-1.88	-4.3
ANLY	26.50	.2019	Analysts Int'l	24.59	0.00	0.1
AUD	75.00	44.00	Auto Data Processing	68.63	0.88	1.3
CATP	36.00	11.88	Cambridge Tech. Partners	41.88	-3.83	-0.1
CEN	14.88	32.13	Ceridian Corp.	35.19	1.94	3.0
CDO	23.25	13.88	Comdisco Inc.	14.88	0.44	3.1
CPU	30.00	14.50	CompUSA Inc.	17.25	-0.13	-0.3
CHRZ	53.50	25.75	Computer Horizons	14.88	1.00	5.1
CSC	36.00	33.44	Computer Sciences	.2019	3.88	2.4
TSK	49.38	37.88	Computer Task Group	39.63	-0.81	-3.0
EGGS	29.11	5.50	Egghead Discount Software	10.44	-0.08	-16.5
EDS	36.00	35.00	Electronic Data Systems Corp.	35.71	-1.19	-2.8
ICO	80.63	22.63	Inacom Corp.	36.00	-2.25	-8.6
KEA	.2094	26.00	Keane Inc.	52.19	-0.88	-0.7
MICA	29.75	36.00	MicroAge Inc.	15.00	-0.19	-1.2
PAYX	35.00	21.88	Paychex	40.94	0.19	0.5
PMS	36.00	27.19	Policy Management Sys. (H)	43.38	-3.06	-7.6
REY	24.88	14.31	Reynolds and Reynolds (L)	18.00	-0.19	-1.2
SAPE	62.00	23.88	Sapient Corp	35.00	0.00	2.1
SCBI	14.75	6.50	SCB Computer Tech. Inc.	8.83	0.00	10.6
SEIC	36.00	36.00	SEI Corp (H)	36.63	1.83	2.5
SMS	36.00	47.75	Shared Medical Systems	59.25	-3.31	-5.0
SSPE	24.25	10.75	Software Spectrum Inc.	16.00	0.44	2.7
SDS	40.00	22.44	Sungard Data Systems	35.00	1.88	-8.6
SYNT	.2088	3.60	Syntel, Inc.	24.30	-1.13	-5.6
VST	17.85	7.50	VanStar Corp.	8.83	0.00	28.7

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

For information on Nordby's customized financial research services, call (303) 938-1877.

How to contact Computerworld

TELEPHONE/FAX

Main phone number ....(508) 879-0700
All editors unless otherwise noted below
Main fax number ....(508) 875-8931
24-hour news tip line..................(508) 820-8555

E-MAIL

Our Web address is www.computerworld.com. All staff members can be reached via E-mail on the Internet using the form:

firstname_lastname@cw.com.

All IDG News Service correspondents can be reached using the form:

firstname_lastname@idg.com.

LETTERS TO THE EDITOR

Letters to the editor are welcome and should be sent to:

letters@cw.com.

Include your address and telephone number.

MAIL ADDRESS

PO Box 9171, 500 Old Connecticut Path,
Framingham, Mass. 01701

SUBSCRIPTIONS/BACK ISSUES

Phone...(800) 552-4431
E-mail..............................circulation@cw.com
Back Issues..............................(508) 820-8167

REPRINTS/PERMISSIONS

Phone.....Ray Trynovich (717) 560-2001, ext. 24
E-mail...........................sales@rmsreprints.com

CONTACTING CW EDITORS

We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter.

Editor in Chief Paul Gillin (508) 620-7724
Executive Editor Maryfran Johnson (508) 820-8179

DEPARTMENT EDITORS/NEWS

News Editor Patricia Keefe (508) 820-8183
Sections Editor Kevin Fogarty (508) 820-8246
Assistant News Editor Michael Goldberg (508) 620-7789
Assistant News Editor Mitch Betts (202) 347-6718
Assistant Sections Editor Anne McCrory (508) 820-8205
Online Editor Johanna Ambrosio (508) 820-8553
Online News Editor Judith H. Bernstein (516) 266-2863
Industry Editor Joe Maglitta (508) 820-8223
West Coast Bureau Chief Galen Gruman (650) 548-5512

NATIONAL CORRESPONDENT

IT services, systems integration, outsourcing Julia King (610) 532-7599

SENIOR EDITORS/NEWS

Labor issues, IS careers Barb Cole-Gomolski (760) 728-8858
Security, network operating systems Laura DiDio (508) 820-8182
Network/systems management Patrick Dryden (817) 924-5485
Microsoft NT, systems software Sharon Gaudin (508) 820-8122
IS management, year 2000, financial services Thomas Hoffman (914) 988-9630
E-commerce, Internet issues Sharon Machlis (508) 820-8231
Microsoft, investigative reports Kim S. Nash (773) 871-3035
Java, intranets, extranets Carol Sliwa (508) 628-4731
Client/server software, Unix applications Craig Stedman (508) 820-8120
Midrange hardware, Unix, mainframes Jaikumar Vijayan (508) 820-8220
Internetworking Bob Wallace (508) 820-8214

SENIOR WRITERS/NEWS

Databases, data warehousing Stewart Deck (508) 820-8155
E-mail, groupware, document management Roberta Fusaro (508) 620-7776
PCs, servers, network computers, Windows April Jacobs (508) 820-8121
Computerworld online Patrick Thibodeau (508) 820-8143

STAFF WRITERS/NEWS

Computerworld online Tom Diederich (650) 548-5581
New products, multimedia, storage Nancy Dillon (650) 548-5538
Telecommunications, federal government Matt Hamblen (508) 820-8567
Application development David Orenstein (650) 524-7116

OPINIONS

Staff Columnist Frank Hayes (503) 252-0100
Columns Editor Steve Ulfelder (508) 620-7745

DEPARTMENT EDITORS/FEATURES

Managing Allan E. Alter (508) 620-7714
Technology reviews/Review Center James Connolly (508) 820-8144

SENIOR EDITORS/FEATURES

Editor at large Gary H. Anthes (202) 347-0134
Features writer Kevin Burden (508) 620-7777
Review Center Cathleen Gagne (508) 620-7729
QuickStudy Stefanie McCann (508) 820-8274
Management Kathleen Melymuka (508) 628-4931
Managing Rick Saia (508) 820-8118
In Depth Steve Ulfelder (508) 620-7745
IT Careers David B. Weldon (508) 820-8166

ASSISTANT EDITOR/FEATURES

IT Careers Man Keefe (508) 628-4906

RESEARCH

Laura Hunt, research analyst; Keith Shaw, graphics coordinator

COPY DESK

Ellen Fanning, managing editor (508) 820-8174; Jamie Eckle, assistant managing editor; David Ramel, senior copy editor; Thomas Gaudet, Pat Hyde, Adam Parez, Bob Rawson, Monica Sambataro, copy editors; Jeremy Selwyn, senior online copy editor

GRAPHIC DESIGN

Tom Monahan, design director (508) 820-8218; Janell Genovese, associate art director/features; Mitchell J. Hayes, associate art director/news; David Waugh, associate art director/online; Nancy Kowal, senior graphic designer; Alice Goldberg-FitzHugh, April O'Connor, graphic designers, Rich Tennant, John Klossner, cartoonists.

ADMINISTRATIVE SUPPORT

Linda Gorgone, office manager (ext. 8176); Connie Brown (ext. 8178), Lorraine Witzell (ext. 8139); Belinda Veras-Moriarty (ext. 8172); Chris Flanagan, editorial assistants. (650) 524-7108.

COMPUTERWORLD MAGAZINES GROUP

(Includes Premier 100, Best Places to Work in IS, Intranet Series, Emmerce, Global Innovators and Careers.)
Alan Alper, editor (508) 820-8115; Joyce Chutchian-Ferranti, senior project editor; Amy Malloy, project editor; Mary Beth Welch, associate art director.

COMPUTERWORLD ONLINE

Computerworld online is our World Wide Web site. On it, we publish features and daily news that supplement our print coverage. We also have special audio features, such as interviews with industry notables, and the Computerworld Minute, an audio version of the day's top news.

And there are lists of URLs and other online resources; some relate to print stories, and some do not. For questions regarding online news, contact Judy Bernstein, online news editor, at (516) 266-2863 or judy_bernstein@cw.com. For non-news online information, contact Johanna Ambrosio, online editor, (508) 820-8553 or johanna_ambrosio@cw.com.

Companies in this issue

Page number refers to page on which story begins. Company names can also be searched at www.computerworld.com.

ABC News .... [illegible]
Aberdeen Group, Inc. .... [illegible]
ABN Amro North America, Inc. .... [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Amazon.com, Inc. .... [illegible]
America Online, Inc. .... [illegible]
Ameritech Corp. .... [illegible]
Ameritech.net .... [illegible]
[illegible]
[illegible]
[illegible]
Association of Universities for Research in Astronomy .... [illegible]
AT&T Corp. .... [illegible]
Autodesk, Inc. .... [illegible]
[illegible]
Banc One Corp. .... [illegible]
BankBoston .... [illegible]
Barnes & Noble, Inc. .... [illegible]
Bay Networks, Inc. .... [illegible]
Bell Atlantic Corp. .... [illegible]
BellSouth Corp. .... [illegible]
[illegible]
[illegible]
Blue Cross/Blue Shield of Tennessee .... [illegible]
Boston University .... [illegible]
Bristol Technology, Inc. .... [illegible]
British Petroleum .... [illegible]
Burger King Corp. .... [illegible]
Cable News Network .... [illegible]
Cahners Business Information .... [illegible]
Canadian Imperial Bank of Commerce .... [illegible]
Cap Gemini America .... [illegible]
Capital One Financial Corp. .... [illegible]
[illegible]
[illegible]
[illegible]
Cisco Systems, Inc. .... [illegible]
Citibank .... [illegible]
[illegible]
Communications Managers Association .... [illegible]
Communications Workers of America .... [illegible]
Compaq Computer Corp. .... [illegible]
[illegible]
Computer Associates International, Inc. .... [illegible]
Continental Grain Co. .... [illegible]
Cooper Industries, Inc. .... [illegible]
Corning, Inc. .... [illegible]
[illegible]
Cummins Engine Co. .... [illegible]
Current Analysis, Inc. .... [illegible]
Cutter Information Corp. .... [illegible]
D. H. Brown and Associates, Inc. .... [illegible]
[illegible]
[illegible]
Dataquest .... [illegible]
Dayton Hudson Corp. .... [illegible]
Defense Logistics Agency .... [illegible]
Dell Computer Corp. .... [illegible]
Deloitte & Touche LLP .... [illegible]
Electronic Data Systems Corp. .... [illegible]
Eli Lilly and Co. .... [illegible]
Entergy Services, Inc. .... [illegible]
Ernst & Young LLP .... [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Federal Trade Commission .... [illegible]
Federal-Mogul Corp. .... [illegible]
[illegible]
[illegible]
First Chicago NBD Corp. .... [illegible]
[illegible]
Forrester Research, Inc. .... [illegible]
Gartner Group, Inc. .... [illegible]
Gateway .... [illegible]
[illegible]
General Electric Co. .... [illegible]
General Motors Corp. .... [illegible]
Giga Information Group .... [illegible]
[illegible]
H&R Block, Inc. .... [illegible]
[illegible]
Hewlett-Packard Co. .... [illegible]
Highmark Blue Cross/Blue Shield .... [illegible]
Hilton Hotels Corp. .... [illegible]
[illegible]
[illegible]
IBM .... [illegible]
ICL PLC .... [illegible]
[illegible]
[illegible]
[illegible]
Information Builders, Inc. .... [illegible]
Informix Corp. .... [illegible]
[illegible]
[illegible]
Inprise Corp. .... [illegible]
Insurance Services Office, Inc. .... [illegible]
Integrated Health Services, Inc. .... [illegible]
Intel Corp. .... [illegible]
Intermountain Health Care .... [illegible]
International Data Corp. .... [illegible]
[illegible]
[illegible]
J. D. Edwards & Co. .... [illegible]
J. D. Power & Associates .... [illegible]
JetForm Corp. .... [illegible]
Johns Hopkins Medicine .... [illegible]
[illegible]
[illegible]
Ladbroke Group PLC .... [illegible]
[illegible]
LOMA, Inc. .... [illegible]
[illegible]
Lockheed Corp. .... [illegible]
London Transport .... [illegible]
Lotus Development Corp. .... [illegible]
Macromedia, Inc. .... [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
MCI Communications Corp. .... [illegible]
[illegible]
[illegible]
Metropolitan Life Insurance Co. .... [illegible]
[illegible]
Microsoft Corp. .... [illegible]
[illegible]
[illegible]
[illegible]
Nasdaq Stock Market, Inc. .... [illegible]
[illegible]
[illegible]
Nautica Apparel, Inc. .... [illegible]
NCR Corp. .... [illegible]
[illegible]
[illegible]
Netscape Communications Corp. .... [illegible]
[illegible]
Northrop Grumman Corp. .... [illegible]
Novell, Inc. .... [illegible]
[illegible]
[illegible]
Oracle Corp. .... [illegible]
Progress Software Corp. .... [illegible]
PeopleSoft, Inc. .... [illegible]
Pizza Hut, Inc. .... [illegible]
Platinum Technology, Inc. .... [illegible]
[illegible]
[illegible]
PricewaterhouseCoopers .... [illegible]
Procter & Gamble Co. .... [illegible]
[illegible]
Professional Consulting Network, Inc. .... [illegible]
[illegible]
Red Sky Interactive .... [illegible]
Remedy Corp. .... [illegible]
Renaissance Worldwide, Inc. .... [illegible]
[illegible]
Rhode Island Hospital Trust .... [illegible]
[illegible]
Salomon Smith Barney .... [illegible]
SAP AG .... [illegible]
Seagate Technology, Inc. .... [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Sprint Corp. .... [illegible]
State Street Bank .... [illegible]
State Street Corp. .... [illegible]
Steel Dynamics, Inc. .... [illegible]
Sun Microsystems, Inc. .... [illegible]
Sybase, Inc. .... [illegible]
[illegible]
[illegible]
T & N PLC .... [illegible]
Taco Bell Corp. .... [illegible]
Tandem Computers, Inc. .... [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
The Help Desk Institute .... [illegible]
[illegible]
The Microsoft Network .... [illegible]
The New York Times .... [illegible]
[illegible]
The Productivity Institute .... [illegible]
The Standish Group International, Inc. .... [illegible]
Ticketmaster Group, Inc. .... [illegible]
Toshiba America Information Systems, Inc. .... [illegible]
[illegible]
[illegible]
Travelers Property Casualty Corp. .... [illegible]
Trend Micro, Inc. .... [illegible]
Trinity Regional Health System .... [illegible]
U.S. Court of Appeals .... [illegible]
U.S. Department of Justice .... [illegible]
U.S. Federal Reserve Board .... [illegible]
Unisys Corp. .... [illegible]
United Parcel Service of America, Inc. .... [illegible]
United Press International .... [illegible]
[illegible]
US West, Inc. .... [illegible]
USA.NET .... [illegible]
Vantive Corp. .... [illegible]
VeriFone, Inc. .... [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Walker Interactive Systems, Inc. .... [illegible]
[illegible]
[illegible]
Weirton Steel Corp. .... [illegible]
[illegible]
[illegible]
[illegible]
Zona Research, Inc. .... [illegible]

Java use

CONTINUED FROM PAGE 1

based Gartner Group Inc. "We have to recognize that it's going to take time. It will be well into 2000 before there are large numbers of big complex Java applications."

"Companies have so much investment in their existing infrastructure that they have to take a very measured approach to introducing new technologies," said Larry Perlstein, an analyst at Dataquest in San Jose, Calif.

Those issues aside, down the road, all signs point to users taking Java in a business-critical direction over the next two to five years. Among the growing pool of evidence are the following indicators:

- Signs of growing use in corporations, particularly on the server side, a signal that Java is being used for more-important applications.
- Programmers finding that Java is easier to use than other object-oriented languages, such as C++, leads to productivity gains, and helps them do cross-platform development better than other languages.
- Strong vendor investment and support from the likes of IBM, Oracle Corp., Netscape Communications Corp., Novell, Inc. and Sybase, Inc.

Even rival Microsoft supports Java, although with a Windows-centric approach.

"It's not whether Java will be used — it's how Java will be used," said Ron Rappaport, an analyst at Zona Research, Inc. in Redwood Shores, Calif., referring to the Sun vs. Microsoft battle.

A recent study by Forrester Research, Inc. in Cambridge, Mass., showed that 24 of 50 Fortune 1,000 companies expect Java to be important or critical to their development strategy by 2000. This year, only 18% could say that.

And *Computerworld*'s Buyers Database shows that 45% of 7,590 polled organizations with 250 or more employees are now developing applications that use Java. In 12 months, 70% of those companies expect to use Java, and with good reason.

"The technology has reached a reasonable level of maturity, and the tools and platforms to run it on will be more universally available," Perlstein said.

NO GARBAGE

"Java is just plain a better language," said Rob Janes, a technical adviser at Cummins Engine Co. in Columbus, Ind. "They took the good parts of C++, left the garbage behind and added neater parts to replace the garbage."

An Ernst & Young LLP survey of 60 information technology executives at global corporations found that many expect they will need to Web-enable their applications for suppliers, remote workers and customers once they have completed ERP and year 2000 projects, said Colette Coad, who directs the Java service line that Ernst & Young set up in October.

"Of all the companies I deal with worldwide, most have decided that they're going to go Java come hell or high water," Plummer said. "But — and this is a big but — they don't know how they're going to do it."

Among the quickest to find a mission-critical purpose for Java have been financial and telecommunications companies, where payback for speedy development can be significant because the applications often involve high-dollar transactions, industry observers said.

Financial institutions "are always early adopters of new technology because of the demands of the trading room," said Tom Nunn, managing director of global capital markets technology at BankBoston Corp. "You owe it to the business to as cost-effectively as possible meet their needs. Java helps us rapidly prototype, develop and implement solutions."

BankBoston is finishing off an application that will help traders, sales staff and eventually institutional investors get the real-time pricing, bond and other information they need to make split-second decisions. Because the application has to run on PCs and Unix workstations in a distributed World Wide Web-based architecture, Java was a good choice, Nunn said.

Though client-side Java has been more prevalent to date, users appear to be recognizing the merits of more recently emerging and maturing server-side Java technology. A new *Computerworld* study shows that 48% of 103 information systems professionals in companies that use Java are writing server-side Java applications.

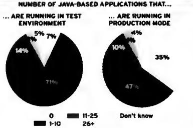
Analysts said they expect Java use to grow more popular on the server as companies increasingly turn to object-oriented programming to write three- and *n*-tier applications that can be distributed across internal networks or the Internet. Programmers can separate out the business logic into the middle tier and more easily connect to multiple databases or mainframe data.

The emergence during the next six months of application servers that support Enterprise JavaBeans (components that can help companies package essential business functions, such as database access, transaction processing or security) will further drive companies in that direction, analysts predicted.

"You can't operate an application that's mission-critical without the full runtime environment that gives you reliable, highly available and scale applications with all the things you've come to expect — load balancing and fail-over support and management tools," said Mike Gilpin, an analyst at Cambridge, Mass.-based Giga Information Group.

Ernst & Young, for instance, already is developing an application to the Enterprise JavaBeans specification to give Standards & Poor's customers access via Internet browsers to articles on financial risk assessment ratings and related topics. ☐

JAVA DEVELOPMENT TRENDS



TOP APPLICATIONS THAT USE JAVA*

Web/Internet	41%
Intranet	21%
Database	12%
Financial/accounting	7%
Order entry	6%

Base: 103 IS managers at companies that use Java

*Multiple responses allowed

Source: Computerworld Information Management Group, Framingham, Mass.

A company might consider Java:

- If an application needs to be distributed across an intranet or the Internet
- If the company used an object-oriented environment in the past
- To encapsulate mainframe functionality, especially if the Common Object Request Broker Architecture is involved

Java might not be the best approach:

- If the company hasn't chosen object-oriented development as a strategic direction
- If the only goal is document display or simple formatting of existing data for viewing via Web browsers.

Source: Ernst & Young LLP

Most companies deploy Java on clients

By Carol Sliwa

DESPITE ITS many well-documented problems, Java remains more prevalent on the client, according to a new *Computerworld* survey.

Close to 70% of the 103 IS professionals surveyed said they use Java for writing client-side applications, and among them, most are writing applets that run in World Wide Web browsers rather than stand-alone Java clients.

"Everybody fights the same battle. You have multiple platforms. You have to be able to provide applications to multiple platforms. Java does solve the problem," said Jonathan Kitchner, vice president of municipal trading systems at Salomon Smith Barney in New York.

Those opting for the browser approach, however, often bemoan uneven Java support in the offerings from Microsoft Corp. and Netscape Communications Corp. Firewalls that screen out Java and performance concerns also have driven some to consider alternatives.

Daiwa Securities America, for instance, opted for a stand-alone Java client.

Hilton Hotels Corp. plans to avoid the browser pitfalls by standardizing on one browser, Microsoft's Internet Explorer, for the new Web-based application that will let hotel chain members enter descriptive information about their hotels into a database, said Brad Hilton, manager of systems development.

First Data Merchant Services Corp. told banks they would have to use Netscape's browser to view merchant credit card information via an extranet. "We had no complaints because most had Netscape," said First Data vice president John Sudec. ☐

Testing the waters

Many Java pioneers are still wrestling with client-side Java, which they first took on to test out and learn more about the much-hyped emerging technology.

Describing his firm's Java use, Cummins Engine senior technical adviser David Nagel said, "It's more than experimentation, but we always have another way to do it."

For example, Cummins is using a Java front end on a CD-ROM application to deliver service information to technicians. But it also provides paper-based catalogs.

Salomon Smith Barney in New York is piloting client-side Java applications, but Jonathan Kitchner, vice president of the company's municipal trading systems division, worries about performance issues and the dearth of Java programmers when it comes to anything more extensive.

"I'm not even looking in that [server-side] direction," Kitchner said. "If you have something that works, and I do, then why would I look elsewhere?" — Carol Sliwa

Java use

CONTINUED FROM PAGE 1

based Gartner Group, Inc. "We have to recognize that it's going to take time. It will be well into 2000 before there are large numbers of big, complex Java applications."

"Companies have so much investment in their existing infrastructure that they have to take a very measured approach to introducing new technologies," said Larry Perlstein, an analyst at Dataquest in San Jose, Calif.

Those issues aside, down the road, all signs point to users taking Java in a business-critical direction over the next two to five years. Among the growing pool of evidence are the following indicators:

- Signs of growing use in corporations, particularly on the server side, a signal that Java is being used for more important applications.
- Programmers finding that Java is easier to use than other object-oriented languages, such as C++; leads to productivity gains; and helps them do cross-platform development better than other languages.
- Strong vendor investment and support from the likes of IBM, Oracle Corp., Netscape Communications Corp., Novell, Inc. and Sybase, Inc.

Even rival Microsoft supports Java, although with a Windows centric-approach.

"It's not whether Java will be used — it's how Java will be used," said Ron Rappaport, an analyst at Zona Research, Inc. in Redwood Shores, Calif., referring to the Sun vs. Microsoft battle

A recent study by Forrester Research, Inc. in Cambridge, Mass., showed that 24 of 50 Fortune 1,000 companies expect Java to be important or critical to their development strategy by 2000. This year, only 18% could say that.

And *Computerworld*'s Buyers Database shows that 45% of 7,590 polled organizations with 250 or more employees are now developing applications that use Java. In 12 months, 70% of those companies expect to use Java, and with good reason.

"The technology has reached a reasonable level of maturity, and the tools and platforms to run it on will be more universally available," Perlstein said.

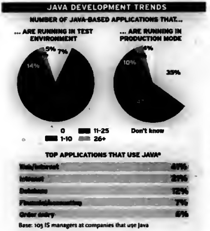
NO GARBAGE

"Java is just plain a better language," said Rob Janes, a technical adviser at Cummins Engine Co. in Columbus, Ind. "They took the good parts of C++, left the garbage behind and added neater parts to replace the garbage."

An Ernst & Young LLP survey of 60 information technology executives at global corporations found that many expect they will need to Web-enable their applications for suppliers, remote workers and customers once they have completed ERP and year 2000 projects, said Colette Coad, who directs the Java service line that Ernst & Young set up in October.

"Of all the companies I deal with worldwide, most have decided that they're going to go Java come hell or high water," Plummer said. "But — and this is a big but — they don't know how they're going to do it."

JAVA DEVELOPMENT TRENDS



Base: 103 IS managers at companies that use Java

*Multiple responses allowed

Source: Computerworld Information Management Group, Framingham, Mass.

Among the quickest to find a mission-critical purpose for Java have been financial and telecommunications companies, where payback for speedy development can be significant because the applications often involve high-dollar transactions, industry observers said.

Financial institutions "are always early adopters of new technology because of the demands of the trading room," said Tom Nunn, managing director of global capital markets technology at BankBoston Corp. "You owe it to the business to as cost-effectively as possible meet their needs. Java helps us rapidly prototype, develop and implement solutions."

BankBoston is finishing off an application that will help traders, sales staff and eventually institutional investors get the real-time pricing, bond and other information they need to make split-second decisions. Because the application has to run on PCs and Unix workstations in a distributed World Wide Web-based architecture, Java was a good choice, Nunn said.

Though client-side Java has been more prevalent to date, users appear to be recognizing the merits of more recently emerging and maturing server-side Java technology. A new *Computerworld* study shows that 48% of 103 information systems professionals in companies that use Java are writing server-side Java applications.

Analysts said they expect Java use to grow more popular on the server as companies increasingly turn to object-oriented programming to write three- and n-tier applications that can be distributed across internal networks or the Internet. Programmers can separate out the business logic into the middle tier and more easily connect to multiple databases or mainframe data

The emergence during the next six months of application servers that support Enterprise JavaBeans (components that can help companies package essential business functions, such as database access, transaction processing or security) will further drive companies in that direction, analysts predicted.

"You can't operate an application that's mission-critical without the full runtime environment that gives you reliable, highly available and scale applications with all the things you've come to expect — load balancing and fail-over support and management tools," said Mike Gilpin, an analyst at Cambridge, Mass.-based Giga Information Group.

Ernst & Young, for instance, already is developing an application to the Enterprise JavaBeans specification to give Standards & Poor's customers access via Internet browsers to articles on financial risk assessment ratings and related topics. □

A company might consider Java:

- If an application needs to be distributed across an intranet or the Internet
- If the company used an object-oriented environment in the past
- To encapsulate mainframe functionality, especially if the Common Object Request Broker Architecture is involved

Java might not be the best approach:

- If the company hasn't chosen object-oriented development as a strategic direction
- If the only goal is document display or simple formatting of existing data for viewing via Web browsers

Source: Ernst & Young LLP

Most companies deploy Java on clients

By Carol Sliwa

DESPITE ITS many well-documented problems, Java remains more prevalent on the client, according to a new *Computerworld* survey.

Close to 70% of the 103 IS professionals surveyed said they use Java for writing client-side applications, and among them, most are writing applets that run in World Wide Web browsers rather than stand-alone Java clients.

"Everybody fights the same battle. You have multiple platforms. You have to be able to provide applications to multiple platforms. Java does solve the problem," said Jonathan Kitchner, vice president of municipal trading systems at Salomon Smith Barney in New York.

Those opting for the browser approach, however, often bemoan uneven Java support in the offerings from Microsoft Corp. and Netscape Communications Corp. Firewalls that screen out Java and performance concerns also have driven some to consider alternatives.

Daiwa Securities America, for instance, opted for a stand-alone Java client.

Hilton Hotels Corp. plans to avoid the browser pitfalls by standardizing on one browser, Microsoft's Internet Explorer, for the new Web-based application that will let hotel chain members enter descriptive information about their hotels into a database, said Brad Hilton, manager of systems development.

First Data Merchant Services Corp. told banks they would have to use Netscape's browser to view merchant credit card information via an extranet. "We had no complaints because most had Netscape," said First Data vice president John Sudec. □

Testing the waters

Many Java pioneers are still wrestling with client-side Java, which they first took on to test out and learn more about the much-hyped emerging technology.

Describing his firm's Java use, Cummins Engine senior technical adviser [illegible] said, "It's more than experimentation, but we always have another way to do it."

For example, Cummins is using a Java [illegible] and on a CD-ROM application to deliver service information to [illegible], but it also provides paper-based catalogs.

Salomon Smith Barney in New York is piloting client-side Java applications, but Jonathan Kitchner, vice president of the company's municipal trading systems division, worries about performance [illegible] and the dearth of Java programmers when it comes to anything more extensive.

"I'm not even looking in that [server-side] direction," Kitchner said. "If you have something that works, and I do, then why would I look elsewhere?" — Carol Sliwa

Merger binge

CONTINUED FROM PAGE 1

Richard Snell coined the phrase describing Federal-Mogul's goal when he took over as chairman of the struggling company in late 1996. The fast pace and sheer size of the acquisitions have pushed the IT group hard.

The Cooper deal would increase Federal-Mogul's revenue from $1.8 billion to $7 billion.

Kerns and his staff have fashioned a process for coping with acquisitions that should help them integrate disparate enterprise resource planning (ERP), order-entry and E-mail systems and customer service operations. "The goal is to provide a single face to our customers," he said.

But it could be a while before that face is seen. The company hasn't begun ERP integration efforts with companies acquired earlier this year, Kerns said. And ERP specialists point to the complexity involved in one acquisition.

"You're talking years of effort integrating ERP systems because the major problem with ERP is that each [package] wants to own the entire operation," said Byron Miller, a vice president at Giga Information Group in Cambridge, Mass. "And each one was developed by a different set of minds."

FOUR-POINT APPROACH

Aside from the long-term ERP challenges, Kerns said his group's strategy for dealing with Federal-Mogul's acquisitions and other multicompany business efforts helps it deal with constant change as Federal-Mogul strives to become a global auto-parts superpower.

Here is the group's four-point program:

- Keep IT staff to support business functions, which is the top issue for Kerns in the first six to 12 months after a merger. "That means keeping IT professionals. We can't have an exodus of people, although people tend to leave because of uncertainty," he said.

  To combat the turnover threat, Federal-Mogul's IT managers quickly meet with IT staffers of acquired companies. "We . . . create an atmosphere where they can ask tough questions," Kerns said.
- Provide E-mail connectivity. Kerns said his group extends Federal-Mogul's Lotus Development Corp. Notes E-mail systems to employees of acquired companies. The company also uses CC:Mail, a legacy of its $3 billion acquisition of Manchester, England-based auto-parts maker T & N PLC in March.
- Assess year 2000 readiness of acquired companies. The acquired firm tends to take this issue very seriously, Kerns said, with project offices and reporting systems in place for business and shop floor systems. "We visit locations for deeper discussions," he said.
- Take an IT inventory of the acquired company. Federal-Mogul assembles an IT integration team to review in depth what the new company has. The team reviews contracts for network services, infrastructure and desktop computers. Software licenses also are included.

"If we find two companies are using the same providers, we can save money by negotiating deeper volume discounts," Kerns said. And knowing what you have can speed the design of new systems for the new organization, he added.

Lincoln Merrihew, an auto industry analyst at J. D. Power & Associates, said Federal-Mogul's biggest challenge will be integrating logistics information. "Since they'll be building systems comprising auto components from each company, they have to be able to find out easily what each other needs to get the job done," he said.

On the upside, Federal-Mogul should be able to deal better with the price-cutting pressure automakers are putting on suppliers. □

Microsoft

CONTINUED FROM PAGE 1

said NT 5.0 "was not perfect" and called it "a work in progress" in a bid to lower expectations about the quality of some of its features and functions. In short, "NT 5.0 is not the be-all, end-all," he cautioned attendees.

The issue isn't missing features but the richness or level of completeness of certain functions. Allchin is essentially telling users to reset their expectations for something that's only OK — even pretty good — but not great. For instance, at one point he said, "Windows hasn't been very good about managing shared [Dynamic Link Libraries]. . . . We haven't solved that problem" with NT 5.0.

That's a dramatic turnabout for a product that Microsoft has continuously touted as having so many new functions that it's more like a new product than an upgrade from NT 4.0. And the scaled-back comments come straight from the same man who said in September 1997 that "Microsoft is going to bet the company" on NT 5.0.

Corporate users, meanwhile, are wondering what functions may come in at less than 100% and whether that will further delay a product that has been baking already for about two years.

"It's a little disappointing because they had a lot of hoopla on what it was going to do," said Bruce Seelinger, applications analyst for the construction products division at Caterpillar, Inc. in Clayton, N.C. "As time goes on, expectations are being whittled down. . . . They almost bit off more than they can chew. Now they're trying to do some spin-doctoring."

Several users said Microsoft's backpedaling better not mean the company isn't delivering fully on some major new features, such as the Active Directory, a reduced number of maintenance reboots, security enhancements and network management. Microsoft says the features will be included, but users are concerned about how complete they will be.

"Overall, I'm betting on NT 5.0 to save me money. It's already in my budget," said Richard Claing, senior project LAN administrator at Pratt & Whitney International Aero Engines AG in East Hartford, Conn. "With this kind of network management, people who are Pratt employees can do a lot of the management instead of calling people in." Claing said about 40% of his network management now is done by outside contractors.

NT - THEN AND NOW

Microsoft comments on Windows NT 5.0:

▶ **"It's a massive release, the most comprehensive release we've ever tried to do. . . . Windows NT is so strategic that Microsoft is going to bet the company on it."**
– JIM ALLCHIN, SEPT. 23, 1997

▶ **"NT 5.0 is not the be-all, end-all . . ."**
– ALLCHIN, AUG. 17, 1998

Dhansham Khemraj, senior system officer at State Street Bank in Boston and a beta tester, said he needs the Active Directory feature at 100%.

"The people [at Microsoft] I'm working with are very optimistic about this product," said Khemraj, who added that they haven't given him the impression that he should worry about not getting what he needs out of NT 5.0. A *Computerworld* reviewer who attended the workshop said the company didn't backtrack on Active Directory.

But as Allchin downplayed NT 5.0's feature set, his right-hand man, Mike Nash, director of marketing for NT server and infrastructure products, tried to downplay Allchin's comments. Nash said Allchin's comments weren't a signal that NT 5.0 will drop expected features or that the company is tacking even more time on to its as-yet-still-unannounced ship date. He said Allchin simply is speaking to the complexity of the project.

But industry watchers aren't so sure.

Randall Kennedy, an analyst at Competitive Systems Analysis, Inc. in Danville, Calif., said Microsoft officials he has talked to are worried about how bug-free and stable NT 5.0 will be.

"They're just realizing how much they've bitten off. If anything, they're stepping back and thinking, 'What did we do here?' " Kennedy said. "This indicates they're worried about their ability to deliver quality, and with 35 million lines of code, that's understandable. They've told me they're not expecting significant performance gains over NT 4." □

Mail vendors duke it out to be No. 1

By Roberta Fusaro

THE BATTLE OF words between IBM's Lotus Development Corp. and Microsoft Corp. over who is the pre-eminent E-mail vendor escalated last week. But the real news is that the broad range of E-mail systems users once enjoyed has been whittled down to two survivors: Lotus Notes and Microsoft Exchange.

Eric Arnum, editor of "Electronic Mail and Messaging Systems," a newsletter in Forest Hills, N.Y., compared the competition to a relay race. Both vendors are selling about 3 million mail client licenses, far ahead of No. 3 Novell, Inc. and its GroupWise product. "The real story is the decline and fall of everyone else except Lotus and Microsoft," he said.

It's likely the momentum shifts between Notes and Exchange will continue, he said. "Notes will have a great [fourth quarter] because they always do — they are already preselling the hell out of Notes 5.0," Arnum said. "Exchange 5.5 is selling well, but Lotus is at the end of its product cycle with Notes 4.6. When Release 5.0 is out in November or December, look for another shift."

SUSPECT DATA?

The latest battle of words centered around an article in the Aug. 10 issue of *Forbes* magazine, which claimed that Microsoft Exchange edged out Lotus Notes as the standard E-mail system in more than half of Fortune 50 companies. The report was based on data commissioned by Microsoft. Lotus claimed the numbers were inaccurate and cited other reports showing it was still in the lead.

A survey to be published in the Sept. 4 issue of "Electronic Mail and Messaging Systems" indicates that Exchange has outsold Notes for a second consecutive quarter. According to the newsletter, 3.6 million Exchange licenses were sold worldwide during the first quarter this year, compared with 3.1 million Lotus Notes licenses sold worldwide in the same period. □

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement #0283657. Computerworld (ISSN 0010-4841) is published weekly except a single combined issue for the last two weeks in December by Computerworld, Inc., 500 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171. Copyright 1997 by Computerworld, Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld, Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus $.50 per page is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Ray Trynovich, Computerworld Reprints, c/o Reprint Management Services, 147 West Airport Rd., PO Box 5363, Lancaster, Pa., 17606-5363. (717) 560-2001, ext. 24. Fax: (717) 560-2063. Web site: www.rmsreprints.com. E-mail: sales@rmsreprints.com. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $4 a copy U.S. — $48 a year; Canada — $110 a year; Central & So. America — $150 (surface) a year; Europe — $295 a year; all other countries — $295 a year. Subscriptions call toll free (800) 552-4431. POSTMASTER: Send Form 3579 (Change of Address) to Computerworld, Box 2044, Marion, Ohio 43305.

The Back Page

alt.cw

Dispatches & images from the fringes of the electronic frontier

TIME ON Y

Now you can waste several hours in the hardware store without ever leaving home. Check out the power sanders, drills and routers at newly launched *www.toolsonline.com*, which offers same-day shipping. For practical tips on actually finishing those home-improvement projects, try *www.todayshomeowner.com*. It features a poll asking: "Have you ever had to fib to your spouse about how much you spent on hardware/tools?"

3 things consultants never say:

- "You're right. We're billing way too much for this."
- "Bet you I can go a week without saying 'synergy' or 'value-added.' "
- "The problem is, you have too much work for too few people."

THE FIFTH WAVE *by Rich Tennant*

E-Mail Rich Tennant at the5wave@tiac.net

"They were selling contraband online. We broke through the door just as they were trying to flush the hard drive down the toilet."

Inside Lines

Antitrust spin-doctoring

Sources close to Microsoft have suggested that the government instigated the media's request to open the depositions of Microsoft executives to the public. Why? The two-week trial delay resulting from the request bought the government time to devise more legal arguments against the company. A lawyer working with Microsoft spun this one: Earlier this year, the Justice Department asked Congress to wipe out the very same 1913 law that the media cited when trying to access the depositions. This month, however, Justice lawyers said they had no problem with open depositions. "The circumstances look very odd," the Microsoft ally said. A Justice Department spokeswoman denied the charges. "We've wanted the trial to start as soon as possible all along," she said.

Y2K mail call

Homeowners with loans from North American Mortgage found "an important message about the year 2000" tucked into their September bills. The mortgage company, a subsidiary of The Dime Savings Bank of New York, spelled out the genesis of the year 2000 problem and its potential for causing inaccurate date calculations, then noted that doing a fix "has been a number one priority since early 1997." The company promised further periodic updates on its progress in getting year 2000-compliant.

I, ahem, love D.C. in the summer

April in Paris, New York in June, but please, not Washington in August. Software Development East, held last week in the nation's humidity capital, was sparsely attended by users and vendors alike. Only half of the top 10 development tools vendors bothered to have a booth. Notable exceptions included Microsoft, Informix, Compuware, Platinum Technology and (although not in the top 10) Inprise and Symantec. Vendors complained about the sparse crowds. A representative of event organizer Miller Freeman blamed the low attendance on the steamy season.

Mainframe license relief?

Expect to see a major announcement from IBM in October that could save mainframe customers oodles of money in software costs. The company is quietly working with several software vendors to hammer out a way for customers to take better advantage of IBM software schemes such as its Measured Usage License Charge. That charge assesses software costs based on actual usage rather than on the capacity of the system it's running on.

Bank shot

The American Bankers Association (ABA) in Washington plans to launch a separate company, called aba.com, at its annual convention in Orlando Sept. 28. The new organization will provide root certificate authorization (akin to the Good Housekeeping Seal of Approval) to verify for consumers that an Internet bank they're doing business with is, in fact, an ABA-approved institution.

Back to the future revisited

Remember the Windows 98 bug that only Dick Clark could love? The one that caused a PC's calendar to shoot ahead a few days if you booted up just as New Year's Eve struck (CW, Aug. 17)? Well, the bug can occur at midnight on any day, not just Dec. 31, Microsoft said last week. The company is working on a fix, but users can undo the problem by manually resetting their calendars.

Remember that old saw about finding the relationship between selling beer and diapers on Friday night? We found another one closer to home. Cruising the Amazon.com site, we ran across the title Oracle8: The Complete Reference, *by George Koch and Kevin Loney (Oracle Series). Amazon tells us that customers who liked this book also bought the Nancy Griffith CD,* Other Voices, Too (A Trip Back to Bountiful). *We're always looking for new insights into human behavior of database architects, programmers and other IT pros. Just contact news editor Patricia Keefe at patricia_keefe@cw.com or (508) 820-8183.*